

Bulletin of the Museum of Comparative Zoology

HARVARD UNIVERSITY

VOL. 133, No. 2

A REVISION OF THE GENUS *RHABDEPYRIS* IN THE
AMERICAS (HYMENOPTERA, BETHYLIDAE)

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WITH SEVEN PLATES

CAMBRIDGE, MASS., U.S.A.

PRINTED FOR THE MUSEUM

MAY, 1965

No. 2 — *A Revision of the Genus Rhabdepyris in the Americas*
(Hymenoptera, Bethyliidae)¹

By HOWARD E. EVANS

Rhabdepyris is possibly the most generalized of the several genera which comprise the bethyloid tribe Epyrini, and within it may be seen trends in the directions of many of the other genera of this tribe. Thus, the hairy-eyed species (subgenus *Trichotepyris*) grade almost imperceptibly into *Anisepyris*; the small, smooth-eyed, hairy-bodied species (subgenus *Rhabdepyris*) differ from *Laelius* only in their more complete wing venation; and the larger, smooth-eyed, smooth-bodied species (subgenus *Chlorepyris*) closely approach *Epyris* and other genera with paired pits on the scutellum. It is important that the systematics of *Rhabdepyris* be well understood if progress is to be made with the remaining genera of this complex. I do not have enough material to treat the Old World fauna at this time, but I present here a preliminary review of the 41 known American species.

The generic diagnosis and key for separation from other Epyrini which I presented in 1964 (Bull. Mus. Comp. Zool., 132: 91-96) will suffice for present purposes. A review of the structure and terminology employed in this series of papers will also be found there, and the acknowledgments and sources of material listed there may also be taken to apply to the present paper. An alphabetical listing of the abbreviations used for body structures and for museums will be found at the conclusion of this paper. Also appended are a check list and an index of the American species.

Although in 1964 I placed *Trichotepyris* and *Chlorepyris* in the synonymy of *Rhabdepyris*, I now find it convenient to use these names for subgenera. The types of *Trichotepyris* and *Rhabdepyris*, *sensu stricto*, are Palaearctic species which I have not seen. It seems probable that our species are consubgeneric with the Palaearctic species, but I cannot be certain of this. Kieffer used the name *Chlorepyris* to apply to species with paired scutellar pits connected by a narrow groove, but as so defined *Chlorepyris* presents no real morphological gap from such species of *Rhabdepyris* as, for example, *origenus* Kieffer.

¹ Supported by a grant from the National Science Foundation, GB-1544.

Chlorepyris is here redefined in a broader sense, to include all glabrous-eyed species in which the body setae are short, pale, and subappressed.

It is difficult to know which of the three subgenera should be regarded as most primitive; actually each is rather generalized but has at least one specialized feature. All of our species of *Rhabdepyris*, *sensu stricto*, are small and black, while both *Trichotepyris* and *Chlorepyris* show trends toward larger size, bright metallic colors, and blotching on the wings. In the latter subgenus one finds unusual modifications of body sculpture, including a tendency for the scutellar groove to be widened into pits on the sides and reduced to a thin line medially.

In all three subgenera the wing venation is much alike (see fig. 63 in Evans, 1964); I have therefore made no mention of venation in the keys and descriptions. The male genitalia are also relatively uniform in structure. They are not wholly without characters, but the differences seem to me too small to justify the difficulties in extracting and mounting these minute structures.

KEY TO SUBGENERA OF RHABDEPYRIS

1. Eyes covered with short setae; males with antennal segment three reduced to a small ring-joint closely consolidated with four (Fig. 18) B. TRICHOTEPYRIS Kieffer
 Eyes glabrous; males with antennal segment three of variable length, sometimes short and transverse but always well separated from fourth segment (Figs. 19-24, 71-73) 2
2. Body and major wing veins clothed with coarse, fuscous setae; pronotum short, its posterior margin paralleled by a foveolate groove; small, black species A. RHABDEPYRIS Kieffer
 Body and wing veins with only fine, pale setae; pronotum fairly long, its posterior margin not paralleled by a foveolate groove; small to moderately large species of black or metallic green or blue coloration C. CHLOREPYRIS Kieffer

A. Subgenus RHABDEPYRIS Kieffer

Rhabdepyris Kieffer, 1904, Bull. Soc. Hist. Nat. Metz, (2)11: 32 (type species: *R. myrmecophilus* Kieffer 1904; designated by Kieffer, 1906).

Subgeneric characters.—Small species of black coloration, without metallic reflections; eyes glabrous, but body and major wing veins clothed with rather large, subappressed to suberect black setae; scape and legs with shorter black setae; middle

tibiae without spines. Mandibles small, in females with two sharp apical teeth and a series of three smaller teeth basad of these (sometimes indistinct), in males with five strong teeth; base of mandibles far removed from bottoms of eyes, the malar space greater than width of mandibles at their base; antennal scrobes not margined; males with third antennal segment much longer than second, nearly as long as fourth segment. Pronotum rather short, sloping strongly to the collar, its posterior margin paralleled by a foveolate groove; notauli often not reaching anterior margin of mesoscutum; scutellar groove strong; propodeal disc only slightly (1.1-1.3 x) wider than long, with five to nine discal carinae, transversely striate, the side-pieces never striate but more or less alutaceous or beaded. Mesopleurum rather irregularly ridged and pitted, the foveae not clearly formed, the lower fovea, when discernible, divided into two by a vertical or oblique ridge. Claws very weakly dentate, the tooth tending to slope outward.

Remarks.—I have not seen the type species, *myrmecophilus*, and consequently use *Rhabdepyris* as a subgeneric name rather tentatively for this complex. The six known American species have all remained undescribed up to the present time. I am familiar with the males of only two of the six species.

KEY TO SPECIES OF SUBGENUS *RHABDEPYRIS*

Females

1. Front angle of ocellar triangle less than a right angle (as in Fig. 1) 2
 Front angle of ocellar triangle a right angle or slightly greater (as in Fig. 2) 4
2. Coxae and femora wholly bright rufo-castaneous; propodeum with nine discal carinae; front femora robust, about 2.3 x as long as wide 1. *mellipes* n. sp.
 Coxae and femora wholly brown or black; propodeum with seven discal carinae; front femora not quite as robust, measuring 2.5-2.7 x as long as wide 3
3. LFW 2.2 mm; scape pale castaneous; antennae elongate, third segment about 1.5 x as long as wide; scutellar groove rather thin and shallow 2. *huachucae* n. sp.
 LFW 1.6-1.8 mm; scape blackish except paler apically; antennae short, third segment 1.0-1.2 x as long as wide; scutellar groove relatively wider and deeper 3. *muesebecki* n. sp.
4. Head rather long and vertex much produced above eye tops; WH 0.93 x LH; WF 1.44 x HE; OOL 1.35 x WOT; a larger species,

- LFW 2.0 mm 4. *gracilis* n. sp.
 Head more nearly circular in anterior view, the vertex only moderately produced above the eye tops (Fig 2); WH 0.98-1.00 x LH; WF not over 1.25 x HE; OOL less than WOT; very small species, LFW under 1.8 mm 5
 5. Front very narrow, WF 0.90 x HE; third antennal segment wider than long; scutellar groove wider on the sides than medially; front femora 2.4 x as long as wide 5. *minutulus* n. sp.
 Front wider, WF 1.23 x HE; third antennal segment longer than wide (Fig. 2); scutellar groove arching, not wider laterally than medially; front femora 2.9 x as long as wide 6. *nigriscapus* n. sp.

Males

- Front angle of ocellar triangle less than a right angle; head considerably wider than high 3. *muesebecki* n. sp.
 Front angle of ocellar triangle approximately a right angle; WH/LH = 1.0 4. *gracilis* n. sp.

TABLE I. SUMMARY OF SOME CHARACTERS OF FEMALES OF SUBGENUS RHABDEPYRIS

Species	Locality	LFW (mm.)	WH/LH	WF/HE	OOL/WOT	Propodeal carinae	Front angle ocellar triangle (degrees, approximate)
1. <i>mellipes</i>	Fla. (type)	2.0	1.00	1.15	1.33	9	70
2. <i>huachucae</i>	Ariz. (type)	2.2	0.92	1.06	1.15	7	80
3. <i>muesebecki</i>	Honduras (type)	1.8	1.01	1.12	1.30	7	70
	"Mexico"	1.7	0.98	1.27	1.30	7	80
	Guerrero	1.6	0.95	1.12	1.36	7	80
	Costa Rica	1.8	0.96	1.09	1.15	7	80
	Bolivia	1.7	1.00	1.09	1.16	7	80
4. <i>gracilis</i>	Calif. (type)	2.0	0.93	1.44	1.35	7	90
5. <i>minutulus</i>	Peru (type)	1.3	1.00	0.90	0.80	7	90
6. <i>nigriscapus</i>	Argentina (type)	1.7	0.98	1.23	0.87	9	100

1. RHABDEPYRIS (RHABDEPYRIS) MELLIPES new species

Holotype. — ♀, FLORIDA: Orange Co., 22 March 1930 (J. E. Sadler, Fla. Fruit Fly Trap Survey) [USNM, No. 67,535].

Description of female type. — Length 3.0 mm; LFW 2.0 mm. Black; palpi and mandibles testaceous, the latter with the teeth rufous; antennae pale castaneous, the flagellum somewhat dull; tegulae testaceous; legs pale rufo-castaneous except the front and hind coxae somewhat infuscated; wings subhyaline. Clypeus obtusely angulate, more sharply angled on the midline, the median carina strong, arched in profile. WH/LH = 1.0; front narrow, WF .57 x WH, 1.15 x HE; front angle of ocellar

triangle less than a right angle; OOL $1.33 \times$ WOT (Fig. 1). Vertex broadly rounded off a considerable distance above eye tops, distance from eye tops to vertex crest equal to slightly more than half HE. Front strongly alutaceous, somewhat shining, punctures shallow and inconspicuous, separated by 2-4 \times their own diameters. First four antennal segments in a ratio of about 20:6:6:7, segment three (like the following segments except the last) very slightly longer than thick.

Pronotal disc $1.6 \times$ length of mesoscutum along the midline, its posterior margin paralleled by a series of large but shallow foveae; pro- and mesonota alutaceous and shallowly punctate like the front; notauli narrowly tear-shaped, diverging in front; scutellar groove quite broad, deflected backward but not enlarged at each end. Propodeal disc $1.2 \times$ as wide as its median length; disc with numerous longitudinal carinae, of which three are complete, six others nearly so; surface aside from the carinae transversely striate; surface of declivity and side-pieces somewhat beaded. Front femora $2.3 \times$ as long as wide.

Remarks.— This species is known only from the type. It is the only member of this complex with pale legs.

2. RHABDEPYRIS (RHABDEPYRIS) HUACHUCAE new species

Holotype.— ♀, ARIZONA: Cochise Co., Huachuca Mts., Ramsey Canyon, 22 March 1956 (F. G. Werner & G. D. Butler) [MCZ, No. 30,936].

Description of female type.— Length 4.0 mm; LFW 2.2 mm. Black; palpi and mandibles testaceous, the latter with the teeth rufous; scape pale castaneous, flagellum dull, light brown below but much darker on the upper side; tegulae testaceous; coxae and hind femora black; front femora and to a lesser extent the middle femora suffused with blackish toward the middle, the legs otherwise pale castaneous; wings hyaline, the veins and stigma light brown. Clypeus somewhat rounded except with a small median tooth formed by the tip of the strong, arched median ridge. Head higher than wide, WH $.92 \times$ LH; front narrow, WF $.59 \times$ WH, $1.06 \times$ HE; front angle of ocellar triangle slightly less than a right angle, OOL $1.15 \times$ WOT. Vertex rounded off a distance above eye tops equal to slightly more than half HE. Front strongly alutaceous, somewhat shining below but rather dull at the ocellar triangle; punctures very small, separated by 2-4 \times their own diameters.

First four antennal segments in a ratio of about 26:9:10:12, segment three 1.6 x as long as wide, all flagellar segments considerably longer than wide.

Pronotal disc 1.6 x as long as mesoscutum along the midline, its posterior margin paralleled by a shallow, weakly foveolate groove; surface of pro- and mesonota uniformly alutaceous, obscurely punctate; notauli slender, slightly attenuate and divergent anteriorly; scutellar groove forming an arc. Propodeal disc 1.18 x as wide as its median length; disc with five parallel carinae, also two additional weaker carinae beside the median carina, otherwise transversely striate; declivity beaded, weakly striate below; side-pieces wholly beaded. Front femora 2.7 x as long as wide.

Remarks.—This species is known only from the type.

3. RHABDEPYRIS (RHABDEPYRIS) MUESEBECKI new species

Holotype.—♀, HONDURAS: intercepted at quarantine on banana debris from Honduras, at Galveston, Texas, 18 February 1935 (C. P. Trotter; No. 887) [USNM, No. 67,536].

Description of female type.—Length 3.4 mm; LFW 1.8 mm. Black; palpi light brown; mandibles testaceous except infuscated at extreme base; scape black except apical .3 pale castaneous like the following segment, remainder of antenna dark castaneous on upper side, light yellowish brown below; tegulae light brown; coxae and femora dark brown, legs otherwise testaceous; wings hyaline, veins and stigma very pale. Clypeus prominent, obtusely subangulate except with a small acute median angulation; median carina high, arched. Head slightly wider than high, WH 1.01 x LH; front rather narrow, WF .58 x WH, 1.12 x HE; ocelli small, front angle of ocellar triangle less than a right angle, OOL 1.30 x WOT. Vertex broadly rounded off a distance above eye tops equal to about half HE. Front evenly alutaceous although moderately shining, punctures shallow but rather distinct, separated by 2–4 x their own diameters. First four antennal segments in a ratio of about 19:6:6:7, segment three 1.1 x as long as thick, segment eleven not longer than thick.

Pronotal disc 1.4 x as long as mesoscutum; posterior margin of disc paralleled by a row of foveae; pro- and mesonota less strongly alutaceous and much more shining than the front. Notauli tear-shaped, diverging toward the front; scutellar groove

curved backward and slightly widened on each end. Propodeal disc 1.20 x as wide as its median length, its features exactly as described for the preceding species; declivity and side-pieces uniformly alutaceous, somewhat shining. Front femora 2.5 x as long as wide.

Allotype. — ♂, HONDURAS: La Ceiba, 21 March 1916 (F. J. Dyer) [USNM].

Description of male allotype. — Length 2.0 mm; LFW 1.7 mm. Black; palpi and mandibles pale, as in female; antennae wholly dark brown, scape almost black; legs dark brown, except front tibiae and tarsi testaceous; wings hyaline, veins and stigma brownish. Clypeus angulate, the median ridge subangulate in profile. Eyes prominent; head wider than high, WH 1.07 x LH; front fairly broad, the eyes convergent below, WF .61 x WH, 1.35 x HE; front angle of ocellar triangle slightly less than a right angle; OOL 1.20 x WOT. Front strongly alutaceous, rather weakly shining, with shallow punctures distributed about as in female. Antennae elongate, first four segments in a ratio of about 13:5:9:11, segment three 1.6 x as long as wide, segment eleven 1.9 x as long as wide.

Thoracic dorsum somewhat more shining and less alutaceous than the front; foveolate groove of pronotum, notauli, and scutellar groove all essentially as in female. Propodeal disc 1.2 x as wide as its median length, with five discal carinae and distinct lateral and sublateral carinae, otherwise transversely striate; side-pieces alutaceous, somewhat shining.

Paratypes. — MEXICO: 1 ♀, with tomato, 30 August 1943, intercepted at quarantine at Brownsville, Texas, 54653, lot no. 43-11640 [USNM]; 1 ♂, "San Rafael Jicoltepec" (? = Jilotepec) [USNM]; 1 ♂, 3-6 mi. S Cuernavaca, Morelos, 4000 feet, 17 April 1959 (H. E. Evans) [MCZ]; 1 ♀, Chilpancingo, Guerrero, 4600 feet, June (H. H. Smith) [BMNH]. COSTA RICA: 1 ♀, San José, 1940 (H. Schmidt) [Sec. Agri., São Paulo, Brazil]. BOLIVIA: 1 ♀, Espia, Rio Bopi, July (W. M. Mann; Mulford Exped., 1921-22) [USNM].

Variation. — The paratypes show only insignificant variation in size (LFW 1.6-2.0 mm). The Morelos male has the legs rather pale, all the tarsi being testaceous, the tibiae only partially infuscated; otherwise there is little variation in color. There is a certain amount of variation in head shape and width of the front, the Mexican female taken at Brownsville having a considerably broader front than any other; the Costa Rica and

Bolivia females have the narrowest front and also have the lateral ocelli less far removed from the eye margins (Table I). The propodeum shows little variation in shape or sculpturing. It is conceivable, though I think not probable, that I am confusing more than one species under one name.

4. RHABDEPYRIS (RHABDEPYRIS) GRACILIS new species

Holotype. — ♀, CALIFORNIA: Sacramento, 25 August 1932 (no collector given) [CAS].

Description of female type. — Length 3.2 mm; LFW 2.0 mm. Black, except last abdominal segment suffused with dark reddish brown; palpi light brown; mandibles testaceous on apical half; scape dark brown, paler apically, flagellum castaneous, darker on upper side than below; tegulae light brown; coxae and femora dark brown, legs otherwise light brown; wings hyaline, veins and stigma light brown. Clypeus obtusely angulate except acute at the midline; median carina low except subangularly produced toward the base. Head higher than wide, WH .93 x LH; front broad, WF .66 x WH, 1.44 x HE; ocelli small, in a rather broad triangle, the front angle approximately a right angle; OOL 1.35 x WOT. Vertex produced well above eye tops, distance from eye tops to vertex crest equal to over two-thirds x HE. Front strongly alutaceous although moderately shining, the punctures small and shallow, separated by 2-3 x their own diameters. First four antennal segments in a ratio of about 19:7:7:8, segment three about 1.3 x as long as thick, segment eleven barely longer than thick.

Pronotal disc 1.35 x as long as mesoscutum, its posterior margin paralleled by a foveolate groove; surface of pro- and mesonota moderately shining, obscurely punctate; notauli strong on posterior half of mesoscutum, tapering and diverging anteriorly; scutellar groove rather wide, deflected backward but barely widened on each side. Propodeal disc 1.10 x as wide as long, with seven discal carinae, otherwise transversely striate; declivity and side-pieces beaded. Front femora 2.8 x as long as wide.

Allotype. — ♂, MEXICO: 10 mi. W Durango, Durango, 12 July 1954 (J. W. MacSwain) [CAS].

Description of male allotype. — Length 2.7 mm; LFW 1.9 mm. Black; palpi brown; mandibles testaceous on apical third, the teeth rufous; scape black, flagellum dark brown; legs dark

brown; wings hyaline. Clypeus broadly subangulate, with a small median tooth; median ridge arched in profile. WH/LH = 1.0; front broad, WF .64 x WH, 1.42 x HE; front angle of ocellar triangle very slightly exceeding a right angle; OOL 1.33 x WOT; vertex broadly rounded off a considerable distance above the eye tops. Front alutaceous and weakly punctate about as in the female. First four antennal segments in a ratio of about 15:5:11:12, segment three 1.8 x as long as wide, segment eleven about twice as long as wide.

Thoracic dorsum weakly alutaceous, obscurely punctate; notauli very short, strong only on the posterior third of the mesoscutum; scutellar groove arcuate, slightly widened on each side. Propodeal disc 1.1 x as wide as long, with five longitudinal carinae, somewhat beaded beside the median carina but elsewhere transversely striate; declivity and side-pieces beaded.

Remarks.—This association of the sexes seems probable on the basis of available material, but only a great deal more collecting will solve this matter finally. I have seen only these two specimens assignable to this species.

5. RHABDEPYRIS (RHABDEPYRIS) MINUTULUS new species

Holotype.—♀, PERU (C.H.T. Townsend Coll.) (no further data) [USNM, No. 67,537].

Description of female type.—Length 1.9 mm; LFW 1.3 mm. Head and thorax black; abdomen dark castaneous; palpi and mandibles testaceous; scape and following two antennal segments testaceous, remainder of antenna dark brown except somewhat paler on the under side; coxae and femora dark brown, middle and hind tibiae medium brown, legs otherwise testaceous; wings hyaline, veins and stigma light amber. Clypeus obtusely angulate, with small median tooth. WH/LH = 1.0; front very narrow, WF .53 x WH, .90 x HE; ocelli in a broad triangle, front angle about a right angle; OOL .80 x WOT. Vertex rounded off a short distance above the eye tops, distance from eye tops to vertex crest equal to less than one-third x HE. Front strongly shining below, more weakly shining and strongly alutaceous above; punctures indistinct. First four antennal segments in a ratio of about 14:5:2:4, segments three and eleven both wider than long.

Pronotal disc 1.3 x as long as mesoscutum, its posterior margin paralleled by a rather weak series of small foveae; surface

moderately shining, obscurely punctate. Mesoscutum with the notauli strong on the posterior half; scutellar groove fairly wide, wider on the sides than medially. Propodeal disc 1.14 x as wide as long, with five longitudinal carinae and two additional, weaker carinae beside the median carina, otherwise transversely striate; declivity and side-pieces shining, rather weakly alutaceous. Front femora 2.4 x as long as wide.

6. RHABDEPYRIS (RHABDEPYRIS) NIGRISCAPUS new species

Holotype. — ♂, ARGENTINA: 5 mi. N Jujuy, 15 February 1951 (Ross & Michelbacher) [CAS].

Description of female type. — Length 2.6 mm; LFW 1.7 mm. Black; palpi and mandibles testaceous; scape black except paler at tip, antennae otherwise dark brown above, light brown on under side; coxae and femora dark brown, legs otherwise pale castaneous; wings hyaline, veins and stigma light brown. Clypeus broadly rounded apically, with a small median tooth. WH .98 x LH; front of moderate width, WF .64 x WH, 1.23 x HE; ocelli in a broad triangle, OOL .87 x WOT (Fig. 2). Distance from eye tops to vertex crest equal to slightly less than half HE. Front rather strongly alutaceous, somewhat shining, with small, shallow punctures which are separated by 3–5 x their own diameters. First four antennal segments in a ratio of about 19:7:6:7, segments three and eleven both about 1.2 x as long as wide.

Thoracic dorsum alutaceous, moderately shining, obscurely punctate; pronotal disc 1.2 x as long as mesoscutum, its posterior margin paralleled by a rather strong series of foveae. Notauli very short, barely longer than wide; scutellar groove arching, not wider on the sides than medially. Propodeal disc 1.10 x as wide as long, with five longitudinal carinae between which are four other, weaker carinae, otherwise transversely striate; declivity weakly transversely striate; side-pieces somewhat beaded. Front femora 2.9 x as long as wide.

Remarks. — This species is similar to the preceding in many ways, but there are so many minor differences that the two are unlikely to be conspecific. Both species are known from the types only.

B. Subgenus TRICHOTEPYRIS Kieffer

Trichotepyrus Kieffer, 1906, in André, Spec. Hymen. Eur., 9: 376 (type species: *R. pallidipennis* Kieffer, 1906; designated by Muesebeck & Walkley, 1950) (proposed as subgenus of *Rhabdepyris*).—Kieffer, 1914, Das Tierreich, 41: 346 (placed in synonymy of *Rhabdepyris*).

Subgeneric characters.—Small to medium-sized bethylids; black, head and thorax sometimes with metallic reflections, abdomen sometimes brownish or in part rufous; eyes densely clothed with short hairs; body with short, fine, mostly pale hair, without the strong dark setae of the preceding group (exception: *nigropilosus*); middle tibiae with or without spines. Mandibles large, in the male terminating in five sharp teeth, in the female with four or five teeth of variable development; base of mandibles fairly close to bottoms of eyes, malar space less than or about equal to width of mandibles at their base (exception: *nigropilosus*); male with third antennal segment very small, shorter than second segment, closely consolidated with the much larger fourth segment. Pronotum moderately long, with or without a foveolate groove paralleling its posterior margin; notauli usually complete or nearly so; scutellar groove strong; propodeum of variable shape, with from three to seven longitudinal carinae, with or without transverse striations; declivity and side-pieces with fine striations in most species. Mesopleurum with an elongate upper fovea (sometimes divided) and a large lower fovea which is often incomplete above. Claws dentate, the tooth distinct, erect or sloping outward to some extent.

Remarks.—I have not seen the type species of *Trichotepyrus* and may or may not be employing the name correctly. The type, from Hungary, has hairy eyes and seems to agree well enough with the American species so far as the description goes, although it is only 3 mm long, which is close to the minimum for our species. The above diagnosis is based entirely on the American species. One species, *nigropilosus*, is intermediate in its characters between this and the preceding subgenus.

KEY TO SPECIES OF SUBGENUS TRICHOTEPYRIS

Females

1. Wings fully developed and unbanded (occasionally somewhat more clouded around radial vein than elsewhere); propodeal disc at least 1.15 x as wide as long 2

- Wings either (a) very short, not reaching the abdomen, or (b) strongly twice-banded, the bands separated by a subhyaline streak at the stigma; small, elongate species, the propodeal disc at most 1.10 x as wide as long (*Pulchripennis* group) 12
2. Body setae coarse, fuscous; veins on basal half of fore wing bearing dark setae which are much larger than the setulae on the wing membrane; side-pieces of propodeum wholly beaded; LFW not over 2.1 mm (*Nigropilosus* group) 7. *nigropilosus* n. sp.
Body setae fine, pale; veins of fore wing bearing pale setae little if any longer than those on the membrane; side-pieces of propodeum at least in part striolate or aciculate (*Megacephalus* group) 3
3. Antennal scrobes carinate; head very broad, WH at least 1.12 x LH (Fig. 4); propodeal disc at least 1.5 x as wide as long 4
Antennal scrobes not at all carinate; head not as broad, WH at most 1.04 x LH (Figs. 5, 6); propodeal disc variable 5
4. Mandibles very large and protuberant, their outer margins strongly rounded, the fourth tooth much broader than the adjacent teeth (Fig. 43); WF 1.45-1.65 x HE 8. *megacephalus* (Ashmead)
Mandibles less prominent, the lower margin much less strongly rounded, the fourth tooth only slightly wider than adjacent teeth (Fig. 44); WF about 1.40 x HE 9. *werneri* n. sp.
5. Lower mesopleural fovea well defined, either completely enclosed or with the upper margin indistinct on the middle third (Figs. 27, 28); front narrow, WF 0.95-1.20 x HE 6
Lower mesopleural fovea poorly defined above, the upper margin very broadly incomplete (as in Figs. 25, 26); front variable 8
6. Front very narrow, WF slightly less than HE; OOL 1.2 x WOT; front femora moderately robust, about 2.1 x as long as wide 16. *subaeneus* Kieffer
Front somewhat broader, WF slightly exceeding HE (Figs. 6, 7); OOL 1.3-1.4 x WOT; front femora more slender, 2.3-2.5 x as long as wide 7
7. Lower mesopleural fovea completely enclosed (Fig. 28); head and thorax strongly reflecting green or blue-green 15. *carolinianus* n. sp.
Lower mesopleural fovea with its upper margin indistinct on the middle third (Fig. 27); head and thorax at most faintly aeneous or violaceous 11. *texanus* n. sp.
8. Lower part of lower mesopleural fovea with some longitudinal striae (Fig. 26); front extremely broad, WF 1.7-1.8 x HE; clypeus rounded or subtruncate apically (Fig. 5) 10. *apache* n. sp.
Lower mesopleural fovea without striae; front less broad, WF not more than 1.4 x HE 9
9. Head much longer than wide, WH 0.91 x LH (Fig. 8); front femora somewhat swollen, their length about 1.9 x their maximum width; cutting edge of mandibles unusually strongly oblique (Fig. 48) 17. *angusticeps* n. sp.

- Head slightly wider than long, WH 1.02-1.03 x LH; front femora more slender, 2.1-2.4 x as long as wide; cutting edge of mandibles less strongly oblique 10
10. Front narrow, WF about 1.10 x HE; propodeum elongate, the disc 1.2 x as wide as long, wholly covered with transverse striae; a minute species, LFW 2.2 mm 19. *plumanni* n. sp.
- Front moderately wide, WF 1.25-1.35 x HE; propodeum shorter, the disc 1.3-1.5 x as wide as long, polished and almost without sculpturing on the sides; LFW 2.4-3.0 mm 11
11. Third antennal segment distinctly longer than wide; legs beyond coxae light castaneous; scutellar groove very thin medially, connecting a pair of round pits 12. *mexicanus* n. sp.
- Third antennal segment wider than long (Fig. 9); femora dark brown; scutellar groove strong, arching, only slightly widened on each side; front femora only 2.1 x as long as wide . . . 13. *fortunatus* n. sp.
12. Wings very short, not reaching posterior margin of propodeum; propodeal disc elongate, as long as or slightly longer than wide; OOL 1.4-1.8 x WOT 23. *amabilis* Fouts
- Wings fully developed; propodeal disc slightly wider than long; OOL 1.25-1.45 x WOT 13
13. Head slightly wider than high, WH 1.03 x LH; WF 1.08 x HE; posterior margin of pronotum not paralleled by a punctate groove 20. *pulchripennis* n. sp.
- Head higher than wide, WH 0.92-0.93 x LH; WF 0.88-0.95 x HE; posterior margin of pronotum paralleled by a strong, punctate groove 14
14. Side-pieces of propodeum shining, very finely aciculate; OOL 1.40 x WOT 21. *iridescens* n. sp.
- Side-pieces of propodeum less shining, with well-defined longitudinal striae which curve upward posteriorly; OOL 1.25-1.35 x WOT 22. *cupreolus* n. sp.

Males

1. Head transverse, very much wider than high (WH at least 1.12 x LH) (Fig. 17); WF at least 1.30 x HE; propodeal disc at least 1.40 x as wide as its median length 2
- Head subcircular, at most slightly wider than high (WH not more than 1.08 x LH) (Fig. 18); front and propodeal disc not usually as wide as above 4
2. Antennal scrobes not carinate; scutellar groove very thin; OOL about 1.2 x WOT; lower mesopleural fovea somewhat striate below 10. *apache* n. sp.
- Antennal scrobes margined by weak carinae which do not reach the eye margins (Fig. 17); scutellar groove wider; OOL and WOT subequal; lower mesopleural fovea without striations 3

3. Propodeum very short, the disc 1.45 to 1.65 x the median length, more or less smooth and polished on the sides behind 8. *megacephalus* (Ashmead)
 Propodeum somewhat longer, the disc 1.40 x as wide as the median length, the surface with fine transverse striations except at the extreme posterior margin 9. *wernerii* n. sp.
4. Antennal scrobes weakly carinate; front and thoracic dorsum olive-green; propodeal disc only slightly wider than long, the width about 1.15 x the median length 18. *olivaceus* n. sp.
 Antennal scrobes not at all carinate; front and thoracic dorsum not or but weakly or in small part olive-green; propodeal disc variable .. 5
5. Femora wholly bright rufo-testaceous; scape rufo-testaceous; LFW 3.4 mm; front narrow, WF 1.16 x HE 14. *lupus* n. sp.
 Femora more or less brownish, dull; scape brownish or black; LFW 2.2-3.2 mm 6
6. Median lobe of clypeus strongly angulate, the angle slightly greater than a right angle except the tip acute; WH 0.98 x LH; propodeal disc wholly covered with rather strong transverse striae 19. *plaumanni* n. sp.
 Median lobe of clypeus broader, obtusely sub-angulate or somewhat rounded, usually with a median tooth, WH 1.00-1.08 x LH; propodeal disc with the striae obsolescent at least posteriorly ... 7
7. Front strongly beaded, rather dull; propodeum strongly alutaceous, its posterior margin paralleled by a strong row of foveae; OOL 1.25-1.45 x WOT; side pieces of propodeum weakly or incompletely striate 23. *amabilis* Fons
 Front alutaceous or moderately beaded, somewhat shining; foveolate groove along posterior margin of pronotum rather weak; OOL 1.05-1.20 x WOT; side pieces of propodeum completely covered with longitudinal striae 8
8. Propodeum short, disc measuring 1.40-1.50 x as wide as the median length; lower mesopleural fovea not at all defined on its upper side 12. *mexicanus* n. sp.
 Propodeum longer, disc measuring 1.20-1.35 x as wide as the median length; lower mesopleural fovea defined on the upper side both in front and behind, the margining ridge generally obsolete in the middle part of the fovea 11. *texanus* n. sp.

TABLE II. SUMMARY OF SOME CHARACTERS OF TYPE SPECIMENS OF SPECIES OF SUBGENUS TRICHOTEPYRIS (♀♀)

Species	LFW (mm)	WH/LH	WF/HE	OOL/WOT	Propodeal disc W/L	Front femora L/W	Antennal scrobes carinate
7. nigropilosus	1.9	1.00	1.00	1.25	1.35	2.5	-
8. megacephalus	3.8	1.15	1.60	1.25	1.70	2.5	+
9. werneri	3.4	1.17	1.40	1.22	1.50	2.7	+
10. apache	4.0	0.94	1.80	1.75	1.60	2.6	-
11. texanus	3.0	0.98	1.10	1.40	1.30	2.5	-
12. mexicanus	3.0	1.02	1.31	1.10	1.50	2.4	-
13. fortunatus	2.4	1.03	1.28	1.23	1.30	2.1	-
15. carolinianus	3.3	0.98	1.10	1.35	1.25	2.4	-
16. subaeneus	2.9	0.92	0.95	1.20	1.25	2.1	-
17. angusticeps	3.0	0.91	1.28	1.75	1.15	1.9	-
19. plaumanni	2.2	1.02	1.10	1.20	1.20	2.3	-
20. pulchripennis	2.6	1.03	1.08	1.45	1.05	2.0	-
21. iridescens	2.6	0.92	0.93	1.40	1.10	2.3	-
22. cupreolus	2.4	0.93	0.95	1.25	1.05	2.4	-
23. amabilis	0.6	0.93	1.05	1.80	1.00	2.3	-

TABLE III. SUMMARY OF SOME CHARACTERS OF TYPE SPECIMENS OF SPECIES OF SUBGENUS TRICHOTEPYRIS (♂♂)¹

Species	LFW (mm)	WH/LH	WF/HE	OOL/WOT	Propodeal disc W/L	Antennal seg. 4 L/W	Antennal scrobes carinate
8. megacephalus	3.0	1.15	1.40	0.96	1.60	2.0	+
9. werneri	2.9	1.15	1.33	0.92	1.40	2.2	+
10. apache	3.4	1.12	1.45	1.20	1.60	2.2	-
11. texanus	2.8	1.04	1.25	1.06	1.20	2.4	-
12. mexicanus	2.5	1.07	1.35	1.06	1.45	1.9	-
14. lupus	3.4	1.01	1.16	1.23	1.33	2.4	-
18. olivaceus	2.5	1.00	1.14	1.16	1.15	2.5	+
19. plaumanni	2.3	0.98	1.22	1.15	1.15	2.5	-
23. amabilis	2.3	1.00	1.35	1.45	1.35	2.5	-

¹ The specimens treated here are either holotypes (*lupus*, *olivaceus*), allotypes (*werneri*, *apache*, *texanus*, *mexicanus*, *plaumanni*), or plesiallotypes (*megacephalus*, *amabilis*). The males of eight species are unknown.

NIGROPILOSUS SPECIES-GROUP

Here I assign a single species which is intermediate in its characters between this and the preceding subgenus. The eyes are hairy, but the setae on the body and wing veins resemble those of *Rhabdepyris*, *sensu stricto*. It is known from females only, and it is possible that the male antennae, when known, will indicate that the species is better placed in *Rhabdepyris*, *sensu stricto*.

7. RHABDEPYRIS (TRICHOTEPYRIS) NIGROPILOSUS new species

Holotype. — ♀, PANAMA: Barro Colorado Island, Canal Zone, Jan. 1960 (W. L. Brown & E. S. McCluskey) [MCZ, No. 30,938].

Description of female type. — Length 2.7 mm; LFW 1.9 mm. Body black, without metallic reflections; palpi and mandibles wholly straw-colored; antennae light brown except basal two-thirds of scape dark brown; tegulae light brown; coxae black, femora dark brown on outer surface, legs otherwise testaceous; wings hyaline, veins and stigma brownish. Head and thorax with an abundance of black setae of moderate length, most of them directed strongly backward; legs also with dark setae, some of those on the tibiae fully erect; major wing veins with dark setae larger than those on the membrane; abdomen with scattered setae ventrally and apically. Mandibles with five teeth, the basal three teeth small, sharp. Clypeus with its median lobe moderately prominent, rounded, with a small median tooth formed by the end of the median carina, which is low although subangulate toward its base. $WH/LH = 1.0$; front narrow, $WF .57 \times WH$, $1.0 \times HE$; front angle of ocellar triangle much less than a right angle, $OOL 1.25 \times WOT$. Antennal scrobes not carinate; vertex smoothly rounded off a very short distance above the eye tops. Front shining, moderately alutaceous, the punctures numerous and fairly large, but so shallow as to barely interrupt the surface. Antennae compact, first four segments in a ratio of about 21:6:7:7, segment three barely longer than wide, outer flagellar segments (except the last) slightly wider than long. (Fig. 3.)

Pronotal disc rather short and broad, along the midline 1.3 x as long as mesoscutum, abruptly margined both in front and on the sides, its posterior margin paralleled by a series of small

foveae; surface (like that of the mesoscutum) shining, moderately alutaceous, the punctures shallow and rather indistinct. Notauli diverging and much attenuated anteriorly; scutellar groove strong, deflected backward and slightly expanded on each end. Propodeal disc 1.35 x as wide as its median length, with five straight, complete discal carinae as well as well developed sublateral carinae, the disc also wholly and somewhat irregularly transversely striate; postero-lateral angles foveolate; declivity strongly beaded, without striae, the median carina strong; side-pieces wholly beaded, without striae. Mesopleurum with a rather irregular series of ridges which do not form distinct, depressed foveae. Front femora measuring 2.5 x as long as wide; middle tibiae not at all spinose.

Paratypes. — PANAMA: 2 ♀ ♀, El Valle, November 1946 (N.L.H. Krauss) [USNM]. BRAZIL: 3 ♀ ♀, Nova Teutonia, Santa Catarina, July 1953, September 1957, and February 1964 (F. Plaumann) [MCZ; Coll. G. R. Ferguson].

Variation. — The Panama paratypes resemble the type very closely in size, color, and sculpturing. In both specimens the head is slightly broader than high (WH 1.02 and 1.04 x LH), the front also somewhat broader in relation to the eyes (WF 1.07 and 1.12 x HE); OOL is 1.18 and 1.35 x WOT. The three paratypes from southern Brazil, although from a locality over 3000 miles from the type locality, show no important differences in color or sculpture. All are slightly larger than the Panama specimens (LFW 2.1–2.2 mm) and two of them have an unusually broad front (WF 1.30 and 1.50 x HE; OOL 1.25 and 1.40 x HE); in all three specimens the head is slightly wider than high. Presumably this species is widely distributed in South America.

MEGACEPHALUS SPECIES-GROUP

To this group I assign twelve species, six of them known from only one sex. These species lack the strong, dark setae of the preceding species and also lack the specializations of the wings of the *pulchripennis* group. This is a closely knit group, and the males are rather difficult to separate.

8. RHABDEPYRIS (TRICHOTEPYRIS) MEGACEPHALUS (Ashmead)

Epyris megacephalus Ashmead, 1893, Bull. U.S. Nat. Mus., 45: 61 [Type: ♀, CALIFORNIA: Poway (San Diego Co.) (no further data) (USNM, No. 14,067)].

Rhabdepyris (*Trichotepyrus*) *megacephalus* Kieffer, 1908, *Genera Insect.*, 76: 32.

Rhabdepyris (*Rhabdepyris*) *megacephalus* Kieffer, 1914, *Das Tierreich*, 41: 355.

Rhabdepyris megacephalus Muesebeck and Walkley, 1951, U.S. Dept. Agri., *Monogr.* 2, p. 729 — Evans, 1964, *Bull. Mus. Comp. Zool.*, 132, figs. 63-67.

Description of female type. — Length 6.5 mm; LFW 3.8 mm. Black, except as follows: pronotal collar ferruginous; apical abdominal segment castaneous; palpi straw-colored; mandibles ferruginous; antennae rather uniformly light castaneous; tegulae testaceous; legs bright castaneous except front coxae blackish; wings subhyaline, veins and stigma amber. Mandibles very stout, their outer margins very strongly rounded; apical margin broad, the outer two teeth acute, the third tooth broad and short but subacute, the fourth tooth very broad and truncate, the fifth (basal) tooth small, rounded, and weakly separated from the fourth tooth (Fig. 43). Clypeus very short, very broadly and weakly subangulate, the median carina subangulate in profile. Head very broad, 1.15 x as wide as high; front very broad, WF .67 x WH, 1.60 x HE; ocelli small, widely spaced, front angle of ocellar triangle slightly less than a right angle, OOL 1.25 x WOT. Antennal scrobes carinate, the carinae not nearly reaching the eye margins; sides of head roundly convergent behind the eyes, the vertex straight across, distance from eye tops to vertex crest about two-thirds x HE; head strongly developed behind the eyes, in lateral view the temples somewhat wider than the eyes. Front strongly shining, weakly alutaceous, with abundant punctures which are separated by 1–2 x their own diameters. Scape long and curved; first four antennal segments in a ratio of about 26:6:5:7, segment three 1.25 x as long as its maximum width.

Pronotal disc sloping very gradually to the collar, sides of disc more abruptly rounded; collar rugulose; disc shining, weakly alutaceous, with small punctures; median length of pronotal disc about twice that of mesoscutum; pronotum with a weak depression paralleling the posterior margin. Mesoscutum and scutellum alutaceous, more so than the pronotum and much more so than the front, punctures smaller than those of the pronotum but well distributed; notauli linear, diverging toward the front; scutellar groove relatively wide and short, broadened and deflected backward on each side. Propodeum very short, the disc 1.7 x as wide as the median length; disc with five longitudinal carinae

and some vague indication of other carinae between them, also transversely ridged between the carinae; postero-lateral portion of disc smooth and polished; sublateral carinae absent; side-pieces longitudinally striolate. Mesopleurum weakly alutaceous and punctate, the lower fovea incomplete above. Front femora 2.5 x as long as wide; middle tibiae very weakly spined above.

Plesiallotype. — ♂, ARIZONA: Tucson, 13 June 1938 (R. H. Crandall) [MCZ].

Description of male plesiallotype. — Length 4.0 mm; LFW 3.0 mm. Head and thorax black, faintly aeneous; abdomen piceous, fading to dark reddish brown apically; palpi straw-colored; mandibles blackish except apical .2 testaceous, the teeth rufous; antennae very dark brown except fading to medium brown at the apex; tegulae testaceous; coxae dark brown, femora medium brown, trochanters, tibiae, and tarsi light brown; wings hyaline, veins and stigma amber. Clypeus broadly rounded, with a small angulation formed by the end of the median carina, the latter very strongly arched in profile. Head broad, 1.15 x as wide as high; WF .64 x WH, 1.40 x HE; ocelli in about a right triangle, OOL .96 x WOT. Antennal scrobes carinate, the carinae not reaching the eye margins; vertex straight across, distance from eye tops to vertex crest equal to about one-third x HE. Front strongly alutaceous, weakly shining, the punctures numerous but shallow and inconspicuous. First four antennal segments in a ratio of about 12:3:2:8, segment four 2.0 x as long as wide, segment eleven 2.2 x as long as wide.

Pronotal disc gradually rounded to the plane of the collar, more abruptly rounded on the sides, the disc alutaceous and very slightly more shining than the front; disc 1.4 x as long as mesoscutum along the midline, its posterior margin paralleled by a distinct, foveolate groove. Mesoscutum moderately shining, with distinct, small punctures; notauli linear, strongly diverging toward the front; scutellar groove strong, roundly expanded on each side. Propodeal disc 1.6 x as wide as long, with five longitudinal carinae between which it is somewhat rugulose, postero-lateral portion smooth and polished; side-pieces longitudinally striolate. Mesopleurum alutaceous, moderately shining, lower fovea not well defined above.

Specimens examined. — CALIFORNIA: 1 ♀, Poway, San Diego Co. [type, USNM]; 1 ♀, Imperial Co., 29 May 1912 (On *Helianthus*, J. C. Bridwell) [USNM]; 1 ♀, Mojave Desert,

Aug. 1937 (R. H. Smith) [USNM]. ARIZONA: 1 ♀, 2 ♂♂, Tucson, June [USNM, MCZ]; 1 ♀, 5 mi. W Portal, May (M. Statham) [AMNH]; 1 ♀, Marana, July (F. Werner) [UA]; 1 ♀, Tubac, June (T. Dees) [UA]; 1 ♀, Huachuca, 1937 (W. Benedict) [KU]; 1 ♀, 1 ♂, Sahuarita, July (G. Butler) [MCZ]; 1 ♀, Oracle Jet., Pinal Co. (F. Werner) [MCZ]; 1 ♀, Empire Mts., 5000 feet, May (A. Nichol) [UA]; 1 ♀, 2 ♂♂, Santa Rita Mts., May, July [CAS, KU]; 1 ♀, McNeal, July (C. Williams) [UA]; 1 ♀, Elfrida, July (A. Telford) [UA]; 1 ♂, Maricopa, June (G. Butler) [UA]; 2 ♂♂, 15 mi. W Ft. Apache, June (Butler & Werner) [UA, MCZ]; 1 ♂, Avra Val, June [UA]; 1 ♂, Superior, July (G. Butler) [UA]; 2 ♂♂, Arivaca, July [KU]; 2 ♂♂, 30 mi. E Pearce, July (Butler & Werner) [UA, MCZ]; 1 ♂, Continental, July (G. Butler) [UA]; 1 ♂, Theba, July (G. Butler) [UA]; 2 ♂♂, Canelo, July (G. Butler) [UA]. NEW MEXICO: 1 ♂, Florida, July (On *Actinella*, T. Cockerell) [USNM]. TEXAS: 1 ♀, Cooper's Store, Big Bend Park, April (C. Michener) [KU]; 1 ♂, Sierra Blanca, El Paso Co., July [USNM].

Variation.—The females show little variation in size or standard measurements; LFW varies from 2.8 to 3.8 mm; WH from 1.12 to 1.17 x LH; WF 1.45 to 1.62 x HE; propodeal disc from 1.50 to 1.65 x as wide as long. Several specimens have weak aeneous or violaceous reflections on the front and on the thoracic dorsum; several have the middle and hind coxae strongly infuscated, like the front coxae, and two have the femora more or less infuscated. The specimens from Tubac and from McNeal, Arizona, have the front more distinctly alutaceous than any of the others. None of the variation seems closely correlated with geography.

The males are somewhat more variable. LFW varies from 2.3 to 3.3; WH from 1.12 to 1.20 x LH; WF from 1.30 to 1.50 x HE; propodeal disc from 1.45 to 1.65 x as wide as long. Several specimens lack metallic reflections on the head and thorax; the color of the flagellum varies from wholly light castaneous to wholly black; in a few specimens the legs are very dark, only the tarsi being light brown. In some specimens the front and thoracic dorsum are rather dull, in others moderately shining. In no case are the punctures of the front conspicuous, but in several specimens they are more evident than in the plesiallo-type. Again, none of the variation seems correlated with geography.

9. RHABDEPYRIS (TRICHOTEPYRIS) WERNERI new species

Holotype. — ♀, ARIZONA: Globe, Gila Co., 3600 feet elevation, 8 July 1949 (mesquite-oak; F. Werner & W. Nutting) [USNM, No. 67,538].

Description of female type. — Length 6 mm; LFW 3.4 mm. Black, except as follows: pronotal collar ferruginous; apical rims of abdominal tergites, and all of apical two tergites, brownish; palpi and tegulae testaceous; mandibles ferruginous; antennae light castaneous, slightly paler below than above; legs light castaneous except front coxae blackish, middle and hind coxae and all the femora weakly suffused with brownish; wings hyaline, veins and stigma amber. Mandibles with the lower margin weakly curved, apex with five teeth in an oblique series, basal two teeth blunt, the fourth tooth only slightly wider than adjacent teeth (Fig. 44). Clypeus very short, the apex very broadly and weakly angulate, the median carina rather broad and ill-defined, not arched or angulate in profile. Head broad, 1.17 x as wide as high; front very broad, WF .67 x WH, 1.40 x HE; front angle of ocellar triangle slightly less than a right angle; OOL 1.22 x WOT. Antennal scrobes carinate, the carinae not reaching the eye margins; distance from eye tops to vertex crest equal to about half the eye height; vertex straight across; head wide behind the eyes, but the temples slightly less bulging than in *megacephalus*. Front alutaceous, moderately shining, punctures separated by 1-2 x their own diameters. First four antennal segments in a ratio of about 40:10:9:9, segment three 1.35 x as long as its maximum width. (Fig. 4.)

Pronotal disc sloping very gradually in front, sides more abruptly rounded; collar weakly rugulose; disc 1.65 x median length of mesoscutum; surface alutaceous and punctate about like the front; posterior margin paralleled by a weak depression which contains a series of fairly large punctures. Mesoscutum and scutellum alutaceous like the pronotum, but with somewhat weaker punctures; notauli linear, strongly diverging toward the front; scutellar groove narrow, bent backward but not notably broadened on each side. Propodeum longer than in *megacephalus*, the disc measuring 1.5 x as wide as the median length; disc with five longitudinal carinae and some less distinct carinae between them, also transversely striolate except toward the posterior margin; side-pieces strongly longitudinally striolate. Mesopleurum alutaceous, weakly punctate, the upper

fovea complete but the lower fovea not at all defined above (Fig. 25). Front femora 2.7 x as long as wide; middle tibiae with several small spines above.

Allotype. — ♂, ARIZONA: 19 mi. N Globe, Gila Co., 20 June 1957 (mesquite; F. Werner & G. Butler) [MCZ].

Description of male allotype. — Length 3.5 mm; LFW 2.9 mm. Black, except as follows: palpi and tegulae light brown; tips of mandibles rufous; flagellum dark brown, fading to medium brown apically; middle and hind coxae and all femora dark brown, tibiae light brown, tarsi testaceous; wings hyaline, veins and stigma amber. Clypeus obtusely angulate, with a small median tooth formed by the end of the median carina, the latter high and arched. Head broad, 1.15 x as wide as high; WF .65 x WH, 1.33 x HE; ocelli in about a right triangle, OOL .92 x WOT. Antennal scrobes carinate, the carinae not nearly reaching the eye margins; vertex passing nearly straight across a short distance above eye tops. Front rather strongly alutaceous although moderately shining, punctures weak. First four antennal segments in a ratio of about 18:5:3:15, segment four 2.2 x as long as wide, segment eleven twice as long as its maximum width. (Fig. 17.)

Pronotal disc 1.3 x as long as mesoscutum along midline, the surface alutaceous about like the front; posterior margin paralleled by a shallow, obscurely punctate groove. Mesoscutum also alutaceous, moderately shining, obscurely punctate; notauli linear, diverging toward the front; scutellar groove widened and turned backward on each side. Propodeal disc 1.4 x as wide as long, with five longitudinal carinae, the more lateral ones rather short, the surface obliquely striolate laterad of the three median carinae, elsewhere transversely striolate except smooth and polished on the posterior .2 of the disc; side-pieces longitudinally striolate. Mesopleurum moderately shining, the lower fovea open above.

Paratype. — ARIZONA: 1 ♀, Sahuarita, Pima Co., 5 July 1956 (swept from cotton, G. D. Butler) [MCZ].

Variation. — The paratype is smaller than the type (LFW 2.9 mm) and shows faint coppery reflections on the head and thoracic dorsum. It is closely similar to the type in color and sculpturing. WF is .66 x WH, 1.39 x HE; OOL is 1.15 x WOT; the propodeal disc is 1.45 x as wide as high.

10. RHABDEPYRIS (TRICHOTEPYRIS) APACHE new species

Holotype.—♀, ARIZONA: Continental, Pima Co., 18 August 1960 (sucked from cotton, G. D. Butler) [MCZ, No. 30,940].

Description of female type.—Length 7 mm; LFW 4 mm. Head and thorax black, thoracic dorsum and to a lesser extent the head with a weak bluish cast; propodeum black; abdomen piceous, the venter and the apical tergite suffused with castaneous; palpi testaceous; mandibles dark ferruginous, infuscated toward the base; scape dark castaneous, infuscated on the upper side throughout; tegulae light brown; legs bright rufo-testaceous except all coxae black, front femora mostly blackish on the lateral surface; fore wings lightly tinged with brownish, veins and stigma amber. Mandibles broad, with five teeth, the basal three teeth somewhat rounded, subequal in size. Clypeus with a strongly projecting median lobe which is rounded apically; median ridge arched near the base, then nearly straight to the apex. Head higher than wide, WH .94 x LH; front broad, WF .72 x WH, 1.80 x HE; ocelli small and well separated, front angle of ocellar triangle less than a right angle, posterior ocelli removed from vertex crest by a distance slightly greater than WOT; OOL 1.75 x WOT, subequal to HE. Head thin, the temples not developed; antennal scrobes not carinate; vertex broadly rounded off far above eye tops, distance from eye tops to vertex crest nearly equal to HE. Front strongly shining, very weakly alutaceous, punctures small although sharply defined, separated by 2-4 x their own diameters. First four antennal segments in a ratio of about 22:5:5:6, segment three 1.2 x as long as its apical width. (Fig. 5.)

Pronotum rather large, along the midline 1.7 x as long as mesoscutum; posterior margin not paralleled by a punctate groove; surface shining but slightly more evidently alutaceous than the front, punctures slightly larger and more widely spaced than on the front. Mesoscutum moderately alutaceous, with small punctures; notauli linear, diverging anteriorly; scutellar groove relatively long and thin, deflected backward at each end but only very slightly enlarged there. Propodeal disc rather short, measuring 1.6 x as wide as its median length; disc with five carinae and two more weak, irregular carinae beside the median carina, otherwise with fine transverse striae except

toward the posterior margin; lateral carinae strong, but sublaterals absent; declivity with curved striae which radiate from the median carina; side-pieces longitudinally striolate. Mesopleurum alutaceous, the lower fovea broadly open above, containing some rather distinct longitudinal striae (Fig. 26). Front femora 2.6 x as long as wide; middle tibiae with strong spines above for most of their length.

Allotype. — ♂, MEXICO: La Aduana, Sonora, 22 May 1962 (F. D. Parker & L. A. Stange) [MCZ].

Description of male allotype. — Length 5 mm; LFW 3.4 mm. Black, head and thoracic dorsum very faintly aeneous, tip of abdomen dark reddish brown; palpi light brown; mandibles black, flagellum dark brown; legs pale castaneous except all coxae and femora strongly infuscated (middle femora only slightly infuscated); wings subhyaline, veins and stigma light brown. Clypeus obtusely angulate, the median carina nearly straight in profile. Head broad, 1.12 x as wide as high; front broad, WF .65 x WH, 1.45 x HE; ocelli in about a right triangle, OOL 1.20 x WOT. Antennal scrobes not carinate; vertex broadly rounded off a distance above eye tops equal to less than half HE. Front shining, weakly alutaceous, with strong punctures which are separated by 1-2 x their own diameters. First four antennal segments in a ratio of about 25:7:4:24, segment four 2.2 x as long as wide, segment eleven 2.6 x as long as wide.

Pronotal disc about as long along midline as mesoseutum, narrowly elevated along posterior margin but without a distinct punctate groove; sides of disc rather sharp, front of disc also sloping rather abruptly to the collar; surface alutaceous like the front, the punctures slightly weaker and sparser. Mesonotum as described for female. Propodeal disc 1.6 x as wide as long, features much as in female except the transverse striae more oblique and extending to the transverse carina. Mesopleurum as in female, but the longitudinal striations somewhat weaker.

Paratypes. — ARIZONA: 1 ♀, Avra Val, July-Aug. 1959 (swept from cotton, C. Allen) [USNM]; 1 ♀, Emery Park, Pima Co., 26 July 1956 (swept from cotton, C. Williams) [UA]. MEXICO: 1 ♂, La Aduana, Sonora, same data as allotype [UCD].

Variation. — The female paratypes are smaller than the type (LFW 3.0, 3.5 mm) and lack bluish reflections on the head and thorax. In these two specimens WH is .96 and .97 x LH, WF

1.75 and 1.80 x HE, OOL 1.55 and 1.62 x WOT. In the smaller specimen, the head is less strongly produced behind the eyes, the distance from the posterior ocelli to the vertex crest being slightly less than WOT; in this specimen the striations on the mesopleura are quite weak. The male paratype closely resembles the allotype in size, color, and standard measurements.

Remarks.—Although the male and female here associated are from localities several hundred miles apart, there are certain striking features in common, rendering this sex association highly probable. These include particularly the striae on the mesopleura and the very slender scutellar groove.

11. RHABDEPYRIS (TRICHOTEPYRIS) TEXANUS new species

Holotype. — ♀, TEXAS: Big Bend National Park, The Basin, Chisos Mts., 5400 feet, 8-14 July 1948 (oak honeydew, H. E. Evans) [MCZ, No. 30,941].

Description of female type. — Length 4.5 mm; LFW 3.0 mm. Head and thorax black, the front and thoracic dorsum very faintly aeneous; abdomen piceous, slightly paler basally and apically; palpi and tegulae testaceous; mandibles bright ferruginous; scape pale castaneous, flagellum of this color on the under side, somewhat darker on the upper side; legs bright, pale rufo-castaneous except all coxae strongly infuscated; wings subhyaline, veins and stigma amber. Mandibles with five teeth in an oblique series, the basal three teeth rather broad and blunt. Clypeus very short, broadly subangulate apically, the median carina arched in profile. Head slightly higher than wide, WH .98 x LH; front rather narrow, WF .62 x WH, 1.10 x HE; ocelli small, front angle of ocellar triangle less than a right angle; OOL 1.40 x WOT. Antennal scrobes not carinate; temples moderately developed; vertex passing straight across a distance above eye tops equal to less than half HE. Front shining, weakly and uniformly alutaceous, punctures strong, separated by 1-2 x their own diameters. First four antennal segments in a ratio of about 35:9:8:11, segment three 1.15 x as long as its maximum width. (Fig. 6.)

Pronotum 1.5 x as long along midline as mesoscutum, its posterior margin paralleled by a weak, non-foveolate depression; surface shining like the front, the punctures slightly more widely spaced. Mesoscutum and scutellum covered with rather small punctures, surface moderately shining; notauli slender,

diverging and becoming gradually attenuated anteriorly; scutellar groove of moderate width, turned backward and slightly expanded on each end. Propodeal disc 1.3 x as wide as its median length; disc with five strong carinae between which are four additional weaker carinae, the disc otherwise wholly covered with fine, transverse striations; side-pieces longitudinally striolate. Mesopleurum alutaceous but moderately shining, with scattered small punctures; upper fovea well formed; lower fovea elongate, well formed except on the middle third of the upper side, where the margin is obsolete (Fig. 27). Front femora 2.5 x as long as wide; middle tibiae with a series of small spines above.

Allotype. — ♂, MEXICO: 8 mi. SE Elota, Sinaloa, 19 May 1962 (F. D. Parker) [MCZ].

Description of male allotype. — Length 3.7 mm; LFW 2.8 mm. Entirely black except as follows: palpi and tegulae light brown; mandibles light brown above and apically, except the teeth rufous; scape black, second and third segments light brown, remainder of flagellum dark brown; legs dark brownish fuscous except the middle and hind tibiae medium brown, the trochanters, front tibiae, and all tarsi testaceous; wings subhyaline, veins and stigma light brown. Clypeus obtusely angulate, with a high median carina which is arched in profile. WH 1.04 x LH; WF .63 x WH, 1.25 x HE; front angle of ocellar triangle less than a right angle, OOL 1.06 x WOT. Antennal scrobes not carinate; vertex very weakly arched, distance from eye tops to vertex crest equal to about one-third x HE. Front strongly alutaceous, moderately shining, obscurely punctate. First four antennal segments in a ratio of about 19:5:3:17, segment four 2.4 x as long as wide, segment eleven 3 x as long as wide. (Fig. 18.)

Pronotal disc about as long along midline as mesoscutum, its posterior margin paralleled by a fairly distinct, obscurely punctate groove; disc moderately shining, with rather weak punctures. Mesoscutum alutaceous, obscurely punctate; notauli and scutellar groove as described for the female. Propodeal disc 1.2 x as wide as long, with five distinct carinae and two other weaker carinae close beside the median carina, disc otherwise with fine transverse striae which are obsolete behind; side-pieces longitudinally striolate. Mesopleurum alutaceous, indistinctly punctate, lower fovea with its upper margin nearly complete, but barely perceptible for much of its length.

Paratypes. — TEXAS: 1 ♀, Brownsville, 21 November 1911, palm jungle sweepings [INHS]; 1 ♀, Cedar Lane, Matagorda Co., 8 September 1928 (J. G. Shaw) [KU]. ARIZONA: 1 ♀, S slope Kitt Pk., Quinlin Mts., Pima Co., 22 April 1961 (M. L. Noller, on composite) [UA]; 1 ♂, S Tucson, 10 June 1962 (F. Werner) [UA]. MEXICO: 2 ♂♂, Rio Yaqui, near Ciudad Obregon, Sonora, 19 May 1957 [ENAC]; 10 ♂♂, 8 mi. SE Elota, Sinaloa, same data as allotype except some 19 April 1962 (L. A. Stange) [UCD, CAS]; 1 ♂, 3 mi. N Alpuyecá, Morelos, 3400 feet, 9 March 1959 (H. E. Evans) [MCZ]

Variation. — In the females LFW varies from 2.5 to 3.1 mm. The two Texas paratypes have the head and thoracic dorsum rather strongly shining and without metallic reflections; the Arizona paratype has these parts rather strongly alutaceous, moderately shining, faintly aeneous-violaceous. WH varies from .96 to .98 x LH; WF varies from 1.10 to 1.18 x HE; propodeum width varies from 1.25 to 1.30 x median length of disc.

The ten male paratypes from Sinaloa show considerable variation in size, color, and sculpture. LFW varies from 2.5 to 3.2 mm. In some specimens the second and third antennal segments are dark like the rest of the antenna, and some variation can be noted in the color of the flagellum and the tibiae. In some specimens the front and thoracic dorsum are strongly alutaceous, almost beaded, while in others these parts are moderately shining and with distinct small punctures; in some specimens the upper margin of the lower mesopleural fovea is apparently only near the anterior and posterior extremities. WH varies from 1.01 to 1.05 x LH, WF from 1.15 to 1.30 x HE; the propodeal disc varies from 1.20 to 1.35 x as wide as long. The two Sonora males show variation in most of these same characters, but are outstanding because of their large size (LFW 3.1-3.3 mm) and because of the fact that the second and third antennal segments are pale castaneous, contrasting strongly with the remainder of the antennae. On the other hand, the Morelos male is small (LFW 2.5 mm), although colored like the Sonora males. In this specimen WH and LH are equal, WF 1.17 x HE, OOL 1.16 x WOT. The Arizona paratype is similar to the allotype in size, color, and standard measurements except that OOL and WOT are equal.

12. RHABDEPYRIS (TRICHOTEPYRIS) MEXICANUS new species

Holotype. — ♀, MEXICO: Nachic, Chiapas [near San Cristobal las Casas], 8000 feet, 27 April 1959 (H. E. Evans) [MCZ, No. 30,942].

Description of female type. — Length 4.2 mm; LFW 3.0 mm. Head and thorax black, with faint olive-green reflections, the pronotal collar dull ferruginous; propodeum black; abdomen black, shining, the last two sternites brownish, the apical tergite mostly testaceous; palpi light brown; mandibles dark ferruginous; antennae wholly rufo-castaneous except apical segments weakly infuscated; tegulae testaceous; legs light rufo-castaneous except all coxae infuscated, front pair nearly black; fore wings lightly tinged with brownish. Mandibles with five teeth, the basal three teeth somewhat rounded. Clypeus obtusely angulate, with a median carina which is weakly arched in profile. Head very slightly wider than high, WH 1.02 x LH; WF .65 x WH, 1.31 x HE; OOL 1.10 x WOT. Antennal scrobes not carinate: vertex broad, nearly straight, distance from eye tops to vertex crest less than half HE. Front shining although moderately alutaceous, the punctures sharply defined, separated by 1.5-2.5 x their own diameters. First four antennal segments in a ratio of about 26:9:8:9, segment three 1.2 x as long as wide.

Pronotal disc only slightly longer than mesoscutum along midline, not sharply margined in front or on the sides; surface somewhat more alutaceous than the front, its punctures slightly more widely spaced; posterior margin paralleled by a weak, non-foveolate depression. Mesoscutum rather strongly alutaceous, the punctures small but numerous; notauli linear, diverging anteriorly, reaching the anterior margin only as very thin lines; scutellar groove quite thin medially, roundly expanded on each end. Propodeal disc about 1.5 x as wide as its median length, with five distinct carinae and two additional weak carinae closely paralleling the median carina; disc irregularly transversely ridged between the carinae, on the sides finely transversely striolate; declivity with transverse striae, side-pieces with very fine longitudinal striae. Mesopleurum somewhat alutaceous, the lower fovea broadly open above. Front femora 2.4 x as long as wide; middle tibiae very weakly spinose above.

Allotype. — ♂, MEXICO: San Cristobal las Casas, Chiapas, 7500 feet, 26 April 1959 (H. E. Evans) [MCZ].

Description of male allotype. — Length 3.5 mm; LFW 2.5 mm.

Entirely black, the front and thoracic dorsum with a faint bluish cast; palpi light brown; mandibles black except the teeth ferruginous; scape black, flagellum dark brown, fading to medium brown apically; coxae and femora dark brown, tibiae suffused with dark brown basally, legs otherwise light brown; fore wings lightly tinged with brownish. Median lobe of clypeus prominent, somewhat rounded, with a median tooth which is a continuation of the high, arching median carina. WH 1.07 x LH; WF .65 x WH, 1.35 x HE; front angle of ocellar triangle less than a right angle, OOL 1.06 x WOT. Antennal scrobes not carinate; vertex broadly rounded off a short distance above the eye tops. Front rather strongly alutaceous although moderately shining, the punctures small and shallow, separated by 2.4 x their own diameters. First four antennal segments in a ratio of about 16:5:4:12, segment four 1.9 x as long as wide, segment eleven 2.2 x as long as wide.

Pronotal disc very slightly longer along midline than mesoscutum, its posterior margin paralleled by a weakly foveolate groove; disc alutaceous and rather weakly shining like the mesonotum; both pro- and mesonota with numerous but shallow punctures; notauli diverging anteriorly; scutellar groove rather thin, expanded and deflected backward at each end. Propodeal disc 1.45 x as wide as its median length; features of propodeum essentially as described for female. Mesopleurum alutaceous, the upper fovea very small, the lower fovea not at all defined on its upper margin.

Paratypes. — MEXICO: 2 ♂♂, Canyon de Lobos, near Yau-tepec, Morelos, 4000 feet, 13-18 March 1959 (H. E. Evans) [MCZ, USNM].

Variation. — The two male paratypes are dull black, without any metallic reflections on the head and thorax, and the front is much more strongly alutaceous and less shining. LFW is 2.5 and 2.7 mm; WH is 1.03 and 1.08 x LH, WF 1.23 and 1.25 x HE, OOL 1.17 and 1.20 x WOT. The propodeum is very similar to that of the allotype both in shape and in sculpture, and the mesopleura are also very similar.

13. RHABDEPYRIS (TRICHOTEPYRIS) FORTUNATUS new species

Holotype. — ♀, COSTA RICA: Alajuela Prov., Banks of Rio Fortuna, near La Fortuna, Canton San Carlos, 17 February 1964 (sweeping low vegetation in pasture; H. E. Evans) [MCZ, No. 30,943].

Description of female type.—Length 3.7 mm; LFW 2.4 mm. Head and thorax black; abdomen black except apical two segments wholly rufo-testaceous; palpi straw-colored; mandibles testaceous; antennae rufo-testaceous beneath, segments two and three wholly of this color, scape and segments 4-13 dark brownish above; tegulae testaceous; coxae and femora dark brown, hind tibiae somewhat infuscated, legs otherwise light castaneous; wings subhyaline, veins and stigma light brown. Mandibles with five teeth (Fig. 45). Clypeus forming a distinct angle which is only slightly greater than a right angle; median carina nearly straight in profile. WH 1.03 x LH; front moderately wide, WF .66 x WH, 1.28 x HE; OOL 1.23 x WOT. Scrobes not carinate; vertex very broadly rounded off a short distance above the eye tops. Front strongly shining, weakly alutaceous, with small punctures which are fairly close below but very widely spaced toward the vertex. First four antennal segments in a ratio of about 25:7:5:8, segment three unusually short, only about .7 x as long as wide, segment four about 1.2 x as long as wide, segment eleven barely longer than wide. (Fig. 9.)

Thoracic dorsum slightly more evidently alutaceous than the front, with small, well-spaced punctures. Posterior margin of pronotum not paralleled by a groove. Mesoscutum weakly transversely impressed; notauli diverging and attenuate anteriorly; scutellar groove fairly strong, deflected backward and slightly widened on each side. Propodeal disc 1.3 x as wide as long, with five discal carinae, transversely ridged between the carinae, the space between the lateral discals and the lateral carinae polished and with only weak surface sculpturing; side-pieces shining, somewhat alutaceous, with a tendency toward the formation of fine longitudinal striae. Mesopleurum shining, weakly alutaceous; upper fovea ovoid; lower fovea with its upper margin broadly obsolete. Front femora 2.1 x as long as wide; middle tibiae weakly spinose.

Remarks.—This species closely resembles the preceding in head shape and in most standard measurements. The legs are darker in color, and the third antennal segment much shorter; there are also differences in the sculpturing of the pronotum and propodeum and in the shape of the scutellar groove. The species is known only from the type.

14. RHABDEPYRIS (TRICHOTEPYRIS) LUPUS new species

Holotype. — ♂, MEXICO: Canyon de Lobos, near Yautepec, Morelos, 4000 feet, 13 April 1959 (H. E. Evans) [MCZ, No. 30,944].

Description of male type. — Length 4.6 mm; LFW 3.4 mm. Black, the head and thoracic dorsum with very faint, dark olive-green reflections in certain lights, the apical abdominal segment suffused with light brown; palpi and tegulae testaceous; mandibles rufo-testaceous on the apical half, black basally; first three antennal segments bright, pale castaneous (except scape weakly infuscated above), segment four and beyond dark brown, slightly paler below than above; legs bright rufo-testaceous except all coxae blackish, the tarsi quite pale; wings subhyaline, veins and stigma brownish. Clypeus rounded apically, with a small median angulation formed by the end of the strong, arched median carina. WH 1.01 x LH; WF .62 x WH, 1.16 x HE; ocellar triangle compact, front angle much less than a right angle; OOL 1.23 x WOT. Antennal scrobes rather sharply margined above, but not actually carinate; vertex passing straight across a rather short distance above the eye tops. Front moderately shining although strongly alutaceous, actually beaded on the lower part, the punctures obscure. First four antennal segments in a ratio of about 28:7:4:23, segment four 2.4 x as long as wide, segment eleven 2.6 x as long as wide.

Thoracic dorsum more shining and less strongly alutaceous than the front, also with distinct small punctures; posterior margin of pronotum paralleled by a distinct foveolate groove; notauli slender throughout, diverging anteriorly; scutellar groove rather broad, expanded on each side. Propodeal disc measuring 1.33 x as wide as its median length, with seven longitudinal carinae, the surface with fine, oblique striae except smooth and polished near the posterior margin; declivity with transverse striae, side-pieces with fine longitudinal striae. Mesopleurum moderately alutaceous, the lower fovea well defined below and at both ends, but the upper margin broadly discontinuous.

Remarks. — This species is known from the type only. It is distinctive by virtue of the narrow, beaded front and the brightly colored legs.

15. RHABDEPYRIS (TRICHOTEPYRIS) CAROLINIANUS new species

Holotype. — ♀, SOUTH CAROLINA: Florence, 18 January 1938 (no collector given) [MCZ, No. 30,945].

Description of female type. — Length 6.0 mm; LFW 3.3 mm. Head dark olive-green, thoracic dorsum also of this color but the pronotum with faint coppery reflections, the pleura nearly black; propodeum black; abdomen piceous, except suffused with reddish brown on the apical third; palpi testaceous; mandibles ferruginous; antennae light castaneous except upper surface of flagellum slightly infuscated on the outer two-thirds; tegulae testaceous; legs light castaneous except the front coxae strongly infuscated; wings very lightly tinged with brownish, more especially around the radial vein of the fore wing. Body with abundant whitish to pale golden, short setae. Mandibles with five teeth, the basal three teeth broad and blunt (Fig. 46). Clypeus short, broadly rounded except with a faint median angulation; median carina very strongly arched in profile. Head .98 x as wide as high; front narrow, WF .60 x WH, 1.10 x HE; OOL 1.35 x WOT; front angle of ocellar triangle less than a right angle. Vertex passing straight across a distance above eye tops equal to less than half HE; antennal scrobes not carinate. Front alutaceous, moderately shining, strongly punctate, the punctures separated by 1-2 x their own diameters. First four antennal segments in a ratio of about 17:5:4:6, segment three barely longer than its maximum width. (Fig. 7.)

Pronotal disc rounded anteriorly and laterally, about twice as long along the midline as the mesoscutum, its surface alutaceous, moderately shining, with strong punctures which are separated by 2-3 x their own diameters, posterior margin paralleled by a weak, obscurely punctate depression. Mesoscutum not transversely depressed; notauli diverging anteriorly, of uniform width throughout; mesoscutum and scutellum alutaceous, punctate throughout, the punctures slightly smaller than those on the pronotum; scutellar groove strong, deflected backward on each side. Propodeal disc 1.25 x as wide as long; disc with a large, basal, median area filled with longitudinal carinae connected by cross-carinae; there are five strong longitudinal carinae, with four additional, somewhat weaker and more irregular carinae between them, such that nine carinae can be readily counted; disc somewhat shining, weakly transversely striolate on the sides behind; side-pieces longitudinally striolate. Mesopleurum with both upper and lower fovea completely

formed, the lower fovea elongate and only weakly constricted near the middle (Fig. 28). Front femora 2.4 x as long as wide; middle tibiae weakly spinose.

Paratype.—♀, FLORIDA: Gainesville, 5 September 1958 (K. W. Cooper) [USNM].

Variation.—The paratype is smaller (about 5 mm, LFW 2.9 mm) and is similarly colored except as follows: front with faint coppery reflections, but thorax without such reflections; antennae and legs (except front coxae) darker than in the type, more or less ferruginous. WH/LH is 1.0; WF is .63 x WH, 1.13 x HE. Otherwise the resemblance to the type is very close.

Remarks.—I have seen no males which might belong to this species.

16. RHABDEPYRIS (TRICHOTEPYRIS) SUBAENEUS Kieffer

Rhabdepyris subaeneus Kieffer, 1906, Berlin. Ent. Zeitschr., 50: 248 [Type: ♀, NICARAGUA: San Marcos (Coll. C. F. Baker) (Pomona College, Claremont, Calif.)].

Rhabdepyris (Trichotepyrus) subaeneus Kieffer, 1908, Genera Insect., 76: 32.

Rhabdepyris (Rhabdepyris) subaeneus Kieffer, 1914, Das Tierreich, 41: 358.

Description of female type.—Length 4.5 mm; LFW 2.9 mm. Head and thorax black, with a very weak metallic green luster; propodeum black; abdomen shining black, apical two segments and sting-palps suffused with rufous; mandibles wholly rufocastaneous; antennae uniformly castaneous; tegulae testaceous; coxae black, dark brown blotches on the outer side of the front and hind femora, legs otherwise bright yellowish brown; wings hyaline. Mandibles fairly broad, with five teeth in an oblique series, basal three teeth somewhat rounded, the basal tooth wider than third and fourth teeth (Fig. 47). Clypeus obtusely subangulate apically, with a high median carina which is arched in profile. First four antennal segments in a ratio of about 35:9:9:11, segment three 1.1 x as long as thick, segment eleven 1.2 x as long as thick. Antennae arising well below bottoms of eyes; scrobes not margined by carinae. Front shining, uniformly but rather weakly alutaceous, punctures strong, separated by about or slightly more than their own diameters. Head higher than wide, WH 0.92 x LH; front narrow, WF .59 x WH, .95 x HE; distance from eye tops to vertex erect equal to only about .3 x HE. Ocelli small, well separated, front angle of

ocellar triangle less than a right angle; OOL 1.2 x WOT; front ocellus below a line drawn between eye tops, posterior ocelli separated from vertex crest by about twice their own diameters.

Pronotum with disc separated from collar by a short, oblique anterior face; disc with fairly sharp margins in front and on the sides, but without carinae, also without a groove paralleling the posterior margin (merely with a barely depressed line of punctures); disc somewhat shining, alutaceous, punctures somewhat weaker and more widely spaced than on the front. Mesoscutum strongly alutaceous, rather weakly shining, punctures small but numerous on posterior half; notauli slender, strongly diverging anteriorly, absent on anterior third. Scutellar disc wholly alutaceous, moderately shining; basal groove fairly broad, somewhat turned backward on sides. Propodeal disc 1.25 x as wide as long, with strong lateral and posterior carinae; disc with seven carinae, but the two carinae closely paralleling the median carina rather weak, only the median carina reaching the posterior margin; disc otherwise transversely striate, the striations obsolescent postero-laterally, where the disc is smooth and polished. Mesopleurum with upper and lower foveae distinct, the latter not divided although somewhat constricted near the middle. Front femora 2.1 x as long as wide.

Remarks.—I have seen no specimens of this species other than the type.

17. RHABDEPYRIS (TRICHOTEPYRIS) ANGUSTICEPS new species

Holotype.—♀, ARIZONA: Tucson, 18 June 1938 (R. H. Crandall) [MCZ, No. 30,946].

Description of female type.—Length 5 mm; LFW 3 mm. Black, except as follows: pronotal collar rufo-testaceous; abdomen suffused with reddish brown on the apical third, the last tergite pale castaneous; palpi straw-colored; mandibles ferruginous; antennae light rufo-castaneous; tegulae testaceous; legs light castaneous except all coxae blackish, front and hind femora partially suffused with black on their outer faces; wings subhyaline, weakly suffused with brown around the radial vein of the fore wing, the veins and stigma amber. Mandibles large, their lower margin weakly arched, the five teeth in a strongly oblique series, the basal three teeth very broad and blunt (Fig. 48). Clypeus very short, very broadly, obtusely angulate, the median carina arched in profile. Head unusually elongate.

.91 x as wide as high; WF .66 x WH, 1.28 x HE; ocelli small, front angle of ocellar triangle less than a right angle, OOL 1.75 x WOT. Sides of head gradually convergent behind the eyes, the vertex relatively narrow, very weakly concave in anterior view; distance from eye tops to vertex crest equal to about .7 x HE. Antennal scrobes not carinate. Front strongly shining, very weakly alutaceous, with strong punctures which are separated by 1.5-3 x their own diameters. Scape flattened, curved; first four antennal segments in a ratio of about 4:1:1:1; segment three 1.3 x as long as its maximum width. (Fig. 8.)

Pronotal disc abruptly rounded anteriorly and on the sides, along the midline 2.4 x as long as the mesoscutum; pro- and mesonota more strongly alutaceous than front, moderately shining, with small, rather evenly distributed punctures; posterior margin of pronotum not paralleled by a punctate groove. Mesoscutum not depressed; notauli linear, strongly diverging toward the front; scutellar groove of moderate breadth, deflected backward on each side. Propodeal disc 1.15 x as wide as long; disc with seven longitudinal carinae, the two carinae close beside the median carina somewhat weaker than the others; surface weakly transversely striolate except on the posterior part; sublateral carinae absent; side-pieces strongly longitudinally striolate. Mesopleurum moderately alutaceous; upper fovea complete; lower fovea elongate, its upper margin obsolete for much of its length. Front femora broad and flat, measuring 1.9 x as long as wide; middle tibiae with a series of small spines on the upper surface.

Remarks.—The tips of all the tarsi of the type and only known specimen are missing.

18. RHABDEPYRIS (TRICHOTEPYRIS) OLIVACEUS new species

Holotype.—♂, PANAMA: Barro Colorado Island, Canal Zone, 28 March 1955 (C. W. Rettenmeyer) [USNM, No. 67,539].

Description of male type.—Length 3.7 mm; LFW 2.5 mm. Head and thorax black, the front and thoracic dorsum with olive-green reflections; abdomen dark brown, shining, slightly paler toward the base and apex; palpi and tegulae testaceous; mandibles testaceous except blackish toward the base, the teeth rufous; antennae dark brown, the scape partially suffused with black, the flagellum paler beneath than above, antennal segments 2 and 3 tending to be slightly paler than the others; legs

testaceous except the front coxae rather strongly infuscated, the femora and the remaining coxae suffused with brownish; wings subhyaline, veins and stigma light brown. Median lobe of clypeus prominent, obtusely angulate except the median point drawn out to an acute angle; median ridge high and arched. $WH/LH = 1.0$; $WF .62 \times WH$, $1.14 \times HE$; ocellar triangle compact, front angle less than a right angle; $OOL 1.16 \times WOT$. Antennal scrobes margined by a rounded, ill-defined carina which does not nearly reach the eye margins; vertex elevated only slightly above the eye tops. Front uniformly and rather strongly beaded, somewhat shining, punctures obscure. First four antennal segments in a ratio of about 20:5:3:15, segment four $2.5 \times$ as long as wide, segment eleven twice as long as wide.

Pronotal disc beaded like the front, quite sharply margined on the sides, the posterior margin paralleled by a row of fairly strong foveae. Mesoscutum obscurely punctate, strongly alutaceous, the notauli arching, divergent toward the front; scutellar groove relatively broad, roundly expanded and deflected backward on each end. Propodeal disc measuring $1.15 \times$ as wide as long; disc with five carinae, between which it is irregularly transversely ridged, outside the carinae wholly covered with fine transverse striations; declivity and side pieces covered with rather weak, irregular striations. Mesopleurum somewhat alutaceous although strongly shining, the upper margin of the lower fovea not at all defined. Claws strongly dentate.

Paratypes.—PANAMA: 1 ♂, same data as type except 11 February 1955 [KU]. COLOMBIA: 1 ♂, La Cumbre, 6000 feet, 23 May 1914 (H. S. Parish) [MCZ].

Variation.—The Panama paratype resembles the type closely in every respect. The Colombia paratype is very slightly larger (LFW 2.7 mm) and has the abdomen wholly castaneous, contrasting to the head and thorax, and the front is more shining and with a faint bluish cast (the pronotum, however, is olive-green). In this specimen WF is $1.25 \times HE$, $OOL 1.40 \times WOT$. In every other respect the resemblance to the type is so close that there seems little question of their conspecificity.

19. RHABDEPYRIS (TRICHOTEPYRIS) PLAUMANNI new species

Holotype.—♀, BRAZIL: Nova Teutonia, Santa Catarina, 7 July 1937 (F. Plaumann) [BMNH].

Description of female type.—Length 3.7 mm; LFW 2.2 mm.

Head and thorax black, except pronotal collar dark ferruginous; abdomen piceous, except the venter and apical two tergites dark reddish brown; palpi testaceous; mandibles rufo-testaceous, somewhat infuscated toward the base; antennae light castaneous except scape and apical few segments somewhat infuscated; coxae and femora dark brown, hind tibiae medium brown, legs otherwise testaceous; fore wings lightly tinged with brownish, veins and stigma light brown. Mandibles with five teeth, the basal three teeth small and rather blunt. Clypeus short and rather rounded apically, but with a small median angulation formed by the end of the high, arched median earina. Head very slightly wider than high, WH 1.02 x LH; WF .60 x WH, 1.10 x HE; OOL 1.20 x WOT. Antennae arising well below bottoms of eyes, the scrobes not carinate; vertex broadly rounded off a very short distance above the eye tops. Front shining, weakly alutaceous, strongly punctate, the punctures for the most part separated by 1-2 x their own diameters. Antennae rather short, the first four segments in a ratio of about 20:7:5:6, segment three slightly wider than long, segments four through twelve each about as long as thick.

Pronotal disc rather abruptly rounded anteriorly and laterally, measuring along the midline about 1.6 x the length of the mesoscutum; surface alutaceous, moderately shining, punctate; posterior margin paralleled by only a very weak groove. Mesoscutum alutaceous and with small punctures, the notauli slightly attenuated and diverging toward the front; scutellar groove deep but quite thin in the middle, much expanded on each side. Propodeal disc 1.2 x as wide as its median length; disc with 7 carinae, between which it is irregularly transversely ridged; disc laterad of the carina with fine striations which extend to the sublateral carinae; declivity with transverse striae and a median earina; side pieces with longitudinal striations on the basal two-thirds, apically merely alutaceous. Mesopleurum moderately shining and with shallow punctures, the lower fovea not closed above. Front femora 2.3 x as long as wide; middle tibiae not spinose.

Allotype. — ♂, BRAZIL: same data except 29 December 1938 [BMNH].

Description of male allotype. — Length 3.6 mm; LFW 2.3 mm. Head and thorax black, abdomen dark reddish brown; palpi testaceous; mandibles rufo-testaceous apically and on the upper margin, elsewhere blackish; scape black, flagellum dark brown;

coxae and femora dark brown, middle and hind tibiae weakly suffused with brown, legs otherwise testaceous; wings subhyaline. Clypeus forming a distinct angle medially, the angulation slightly greater than a right angle except at the mid-point, where it is acute; median carina very high, strongly arched. WH .98 x LH; WF .63 x WH, 1.22 x HE; ocelli in a compact triangle, OOL 1.15 x WOT. Antennal scrobes not carinate; vertex evenly rounded off a short distance above the eye tops. Front uniformly and rather strongly alutaceous, although somewhat shining, punctures small and shallow, separated by 2-3 x their own diameters. First four antennal segments in a ratio of about 19:6:3:15, segment four 2.5 x as long as wide, segment eleven 2.4 x as long as wide.

Thoracic dorsum uniformly alutaceous, moderately shining, obscurely punctate; pronotal disc rather abruptly rounded on front and sides, its posterior margin paralleled by a strong, foveolate groove; scutellar groove as described for female. Propodeal disc measuring 1.15 x as wide as its median length, with five discal carinae, otherwise wholly covered with fine transverse ridges; side pieces longitudinally striate. Mesopleurum somewhat alutaceous, obscurely punctate, the lower fovea completely open above.

Paratype.—1 ♂, BRAZIL: same data as type except June 1962 [MCZ].

Variation.—The paratype is only 3.0 mm long, LFW 2.0 mm. The mandibles and legs are somewhat darker than in the allotype, but there are no noteworthy differences in structure. WF is 1.18 x HE, OOL 1.30 x WOT, the propodeal disc 1.2 x as wide as long.

PULCHRIPENNIS SPECIES-GROUP

This group includes four specialized members of this subgenus, all of them small, slender species exhibiting more or less unusual color patterns (at least in the females). The wings are conspicuously banded or, in one species, much abbreviated. The middle tibiae are weakly if at all spinose, the eyes relatively large and very densely hairy.

20. RHABDEPYRIS (TRICHOTEPYRIS) PULCHRIPENNIS new species

Holotype.—♀, COSTA RICA: Turrialba, 24 June 1949 (K. W. Cooper) [USNM, No. 67,540].

Description of female type.—Length 3.7 mm; LFW 2.6 mm. Head and thorax black, with extremely faint coppery reflections, the pronotal collar ferruginous; propodeum and abdomen shining black, the tip of the abdomen suffused with reddish brown; palpi and mandibles testaceous, the antennae also of this color except the apical segment tipped with fuscous; tegulae testaceous; legs bright testaceous except the front and middle femora weakly and in part suffused with fuscous; wings subhyaline except the fore wing with a fuscous cloud over the outer half of the median and submedian cells and a second fuscous cloud in and below the marginal cell; veins brown except yellowish at extreme base of wing. Body with fairly dense, short, golden brown setae. Mandibles with five teeth, the basal three teeth small and sharp. Clypeus sharply, obtusely angulate. Head 1.03 x as wide as high; front narrow, WF .62 x WH, 1.08 x HE; OOL 1.45 x WOT. Front alutaceous, rather weakly shining, with small punctures which are separated, for the most part, by 1.5-2.5 x their own diameters. Vertex rounded off a short distance above the eye tops; antennal scrobes not carinate. First four antennal segments in a ratio of about 11:3:2:3, segment three considerably wider than long.

Pronotal disc 1.5 x as long medially as mesoscutum, alutaceous and punctate much like the front, without a line of punctures paralleling the posterior margin. Notauli diverging and attenuated anteriorly; mesoscutum weakly depressed laterad of notauli. Scutellar groove turned backward and considerably widened on each side. Propodeal disc 1.05 x as wide as long; disc with five strong carinae, the median carina complete and the others nearly so, transversely ridged between the carinae; posterior lateral part of disc smooth and polished; side-pieces not striolate, merely weakly aciculate. Mesopleurum with the foveae incompletely defined. Front femora 2.0 x as long as wide; middle tibiae spinose.

Remarks.—This species is known only from the type.

21. RHABDEPYRIS (TRICHOTEPYRIS) IRIDESCENS new species

Holotype.—♀, MEXICO: 4 mi. E Cuernavaca, Morelos, 6000 feet, 25 June 1959 (H. E. Evans) [MCZ, No. 30,949].

Description of female type.—Length 3.6 mm; LFW 2.6 mm. Head black, front with strong violet reflections; thorax black, the dorsum with coppery reflections, the pronotal collar ferruginous; propodeum and abdomen shining black, the extreme tip

of the abdomen dull brownish; palpi and mandibles testaceous, antennae of this color but the outer side of the flagellum somewhat darker, the apical five segments distinctly infuscated; tegulae testaceous; legs wholly bright rufo-testaceous; wings hyaline except the fore wing with a fuscous cloud over the outer half of the median and submedian cells and a second cloud around and below the radial vein; wing veins brown where the membrane is clouded, elsewhere (including the stigma) testaceous. Mandibles with five teeth, the basal three teeth short and rounded. Clypeus obtusely angulate. Head .92 x as wide as high; front very narrow, WF .59 x WH, .93 x HE; OOL 1.40 x WOT. Front strongly alutaceous although somewhat shining, punctures very shallow and inconspicuous. Vertex rounded off a short distance above eye tops; antennal scrobes not carinate. First four antennal segments in a ratio of about 14:4:4:5, segment three slightly longer than wide. (Fig. 10.)

Pronotal disc 1.2 x as long medially as the mesoscutum, alutaceous and obscurely punctate like the front, with a line of small foveae paralleling the posterior margin. Notauli linear, arcuately diverging anteriorly; mesoscutum not notably depressed on the sides. Scutellar groove slightly broadened and deflected backward on each side. Propodeal disc 1.1 x as wide as long; disc with seven strong carinae, finely transversely striate throughout, but the striae obsolescent on the sides behind; sublateral carina not distinct; posterior angles foveolate; side-pieces shining, weakly aciculate. Mesopleurum with the foveae incompletely defined. Front femora 2.3 x as long as wide; middle tibiae only very weakly spinose.

Remarks.—This remarkably colored species is known only from the type, which was collected at honeydew on the foliage of walnut trees.

22. RHABDEPYRIS (TRICHOTEPYRIS) CUPREOLUS new species

Holotype.—♀, BRAZIL: Nova Teutonia, Santa Catarina, July 1953 (F. Plaumann) [MCZ, No. 30,950].

Description of female type.—Length 3.8 mm; LFW 2.4 mm. Head and thorax black, the front with coppery reflections, the thoracic dorsum with obscure coppery to olive-green reflections, the pronotal collar ferruginous; propodeum black; abdomen piceous, suffused with light brown toward the apex, the last segment testaceous; palpi straw-colored; mandibles rufo-testaceous, slightly darker on the apical half than basally; antennae

wholly testaceous except all segments weakly infuscated on the upper side; tegulae testaceous; legs bright testaceous except front coxae mostly fuscous, front femora partially infuscated on the outer surface; wings faintly luteous, fore wing with two broad fuscous bands separated by a narrow sub-hyaline band which includes the stigma, as in the preceding two species. Mandibles with five teeth, the basal three teeth rather small. Clypeus broadly, obtusely subangulate, the median ridge arched in profile. Head .93 x as wide as high; front very narrow, WF .57 x WH, .95 x HE; ocelli in a compact triangle, OOL 1.25 x WOT. Antennal scrobes not carinate; vertex rounded off a short distance above the eye tops. Front strongly alutaceous, rather weakly shining, with shallow punctures which are separated by 1-3 x their own diameters. First four antennal segments in a ratio of about 27:8:6:9, segments three and eleven barely longer than wide, segment four about 1.3 x as long as wide.

Thoracic dorsum strongly alutaceous, weakly shining, the punctures obscure; pronotum with a strong foveolate groove paralleling the posterior margin; notauli linear, diverging anteriorly; scutellar groove rather wide, roundly expanded at each end. Propodeal disc 1.05 x as wide as long; disc with five longitudinal carinae and with two additional weak carinae close beside the median carinae, otherwise wholly covered with transverse striae; side-pieces wholly covered with fine longitudinal striae which tend to curve upward posteriorly. Mesopleurum strongly alutaceous, the lower fovea elongate, fairly well defined. Front femora slender, 2.4 x as long as wide; middle tibiae not spinose.

Paratypes.—BRAZIL: 1 ♀, same data as type [Coll. G. R. Ferguson]; 1 ♀, Bocaiuva, Parana, 1000 meters elev., May 1963 (F. Plaumann) [MCZ].

Variation.—The topotypic paratype is of the same size as the type, but differs slightly in color: the coppery reflections of the front and pronotum are rather strong, and the front also has rather strong violet reflections, especially anteriorly; the front coxae are only slightly infuscated, and the front femora are wholly without infuscation. In this specimen WH/LH is .94, WF/HE is .96, and OOL/WOT is 1.35. The Bocaiuva paratype is larger (LFW 2.9 mm) but colored like the type. In this specimen WH/LH is .92, WF/HE is .88, and OOL/WOT is 1.33.

23. RHABDEPYRIS (TRICHOTEPYRIS) AMABILIS Fouts

Rhabdepyris amabilis Fouts, 1927, Proc. Ent. Soc. Washington, 29: 165-166 [Type: ♀, MARYLAND: Glen Echo, July (R. M. Fouts) (Coll. Fouts)]. —Muesebeck and Walkley, 1951, U.S. Dept. Agri., Monogr. 2, p. 729.

Description of female type.—Length 3.5 mm; wings very short, fore wing reaching slightly past the middle of the propodeum, LFW 0.55 mm. Head and thorax black, faintly aeneous, except the pronotal collar testaceous; propodeum black; abdomen piceous, fading to dark brown apically; palpi light brown; mandibles and basal three antennal segments pale castaneous, rest of antenna dull castaneous below, dark brownish above; tegulae testaceous; legs bright, pale castaneous except front coxae moderately infuscated; wings hyaline, the veins testaceous. Body clothed with short, golden setae. Mandibles with five teeth, the basal three teeth subequal except the basal tooth more rounded than the others. Clypeus with its median lobe moderately prominent, rounded, with a strong median carina which is arched in profile. Head relatively long and slender, only 1.2 x as wide as maximum width of thorax (across mesothorax); WH .93 x LH; WF .60 x WH, 1.05 x HE; ocelli small, front angle of ocellar triangle less than a right angle; OOL 1.80 x WOT. Antennal scrobes not carinate; temples not well developed; vertex rounded off a distance above eye tops equal to slightly more than half HE. Front alutaceous, moderately shining, punctures moderately strong, small, separated by 2-3 x their own diameters. First four antennal segments in a ratio of about 31:7:7:9, segment three about as long as its apical width.

Pronotum quite long, the disc nearly 3 x the length of the mesoscutum, the punctures small, more widely spaced than on the front; posterior margin paralleled by only a very faint, non-foveolate groove. Mesoscutum short, transversely depressed, especially laterally, the surface rather strongly alutaceous, obscurely punctate; notauli slender, diverging anteriorly; scutellar groove moderately wide, deflected backward but not enlarged on each end. Propodeal disc about as long as wide, the median carina complete, paralleled by two other incomplete carinae, the surface reticulate between and beside these carinae and tending to form two additional weak carinae close beside the median carina; elsewhere smooth, weakly alutaceous, with a few weak longitudinal striae at the extreme upper basal angles. Mesopleurum rather irregularly pitted, the lower fovea not defined

on its upper side. Front femora 2.3 x as long as wide; middle tibiae not spinose above. Fore wings slender, nearly 4 x as long as wide, with three longitudinal veins which unite apically to form two cells; hind wings even more slender, reaching to about the apex of the cells of the fore wings.

Plesiallotype. — ♂, VIRGINIA: Falls Church, 2 August (N. Banks) [MCZ].

Description of male plesiallotype. — Length 3.4 mm; LFW 2.3 mm. Head and thorax piceous, abdomen dark reddish brown, paler at base and apex; palpi straw-colored; mandibles rufo-testaceous, darker basally; antennae uniformly medium brown except the second segment slightly paler, the scape weakly infuscated above; tegulae light brown; coxae and femora dark brown, tibiae medium brown, trochanters and tarsi light brown; wings hyaline, veins and stigma light brown. Clypeus with a prominent median lobe which is somewhat rounded but with a median tooth, which is at the end of the high, arched median carina. WH/LH = 1.0; WF .64 x WH, 1.35 x HE; ocelli in a small triangle, the front angle less than a right angle, OOL 1.45 x WOT. Antennal scrobes not carinate; vertex broadly rounded off a distance above eye tops equal to about half HE. Front somewhat shining although very strongly alutaceous, more or less beaded, obscurely punctate. First four antennal segments in a ratio of about 21:6:5:15, segment four 2.5 x as long as wide, segment eleven 3 x as long as thick.

Pronotal disc about 1.2 x as long as mesoscutum, measured along midline, its posterior margin paralleled by a series of small but well defined foveae, the disc otherwise obscurely punctate, alutaceous but by no means beaded like the front. Surface of mesoscutum about like that of the pronotum, the notauli linear, diverging toward the front; scutellar groove arching backward on the sides, wider laterally than medially. Propodeal disc 1.35 x as wide as long; disc with five carinae, the most lateral ones rather short; surface reticulate between the carinae, elsewhere finely transversely striolate, the striae obsolescent posteriorly; declivity with transverse striae and an incomplete median carina; side-pieces alutaceous, with fine longitudinal striae toward the front. Mesopleurum alutaceous, obscurely punctate, the upper margin of the lower fovea not well defined.

Specimens examined. — MASSACHUSETTS: 1 ♀, Lexington, 28 August 1955 (mesic forest, W. L. Brown) [MCZ]. MARYLAND: 1 ♀, Glen Echo [type, coll. Fouts]. DISTRICT

OF COLUMBIA: 1 ♀, Washington, September (J. C. Bridwell) [USNM]. VIRGINIA: 1 ♀, 3 ♂♂, Falls Church, 2-11 August (N. Banks) [MCZ]. FLORIDA: 2 ♀♀, Gainesville, May, October 1958, 1959 (K. W. Cooper) [USNM].

Variation.—The three males vary slightly in size (LFW 2.2-2.5 mm) and show some variation in the degree of infuscation of the legs and antennae. In the two specimens other than the plesiallotype the lateral ocelli are somewhat less far removed from the eyes, OOL being 1.25 x WOT in both specimens. WF varies from 1.30 to 1.35 x HE; the propodeal disc varies from 1.2 to 1.35 x as wide as long.

The available females show so much variation that one is tempted to place them in several subspecies. However, since only six specimens are at hand, and since some of the variation appears allometric (e.g. relatively longer wings in the larger specimens) and much of it clinal (e.g. brighter colors and narrower front toward the south), it would be premature to erect subspecies at this time. Some of the variation is tabulated below (Table IV). In spite of this variation, it should be pointed out that the entire series is much alike with respect to form of the mandibles and clypeus and features of the thoracic dorsum and propodeum. The two Florida specimens are strikingly colored, having the head ferruginous except the central part of the front black, the thorax and propodeum ferruginous except the mesoscutum spotted with black laterad of the notauli, and the first two abdominal segments maculated with ferruginous basally.

TABLE IV. VARIATION IN SIX FEMALES OF RHABDEPYRIS AMABILIS FOUTS

Locality	Length (mm.)	Wing length (mm.)	Color of legs	Color head and thorax	WH/LH	WF/HE	OOL/WOT
Massachusetts	3.3	.45	brownish	black, slightly aeneous	.93	1.13	1.75
Maryland	3.5	.55	testaceous	as above	.93	1.05	1.80
Dist. Columbia	4.7	.75	as above	as above	.94	1.05	1.65
Virginia	4.3	.60	as above	as above	.95	1.12	1.70
Florida	3.3	.50	light brown	mostly ferruginous	.97	0.90	1.40
Florida	3.0	.40	as above	as above	.94	0.96	1.55

C. Subgenus *CHLOREPYRIS* Kieffer

Chlorepyris Kieffer, 1913, Boll. Lab. Zool. Portici, 7: 108 (type species: *C. semiviridis* Kieffer 1913 [= *viridissimus* Kieffer 1911]; designated by Kieffer, 1914). —Kieffer, 1914, Das Tierreich, 41: 412-416 (key to spp., Oriental and Neotropical regions). —Kurian, 1955, Agra Univ. Jour. Res., 4: 101-105 (Oriental spp.).

Subgeneric characters.—Small to fairly large bethylids (up to 10 mm); black, head and thorax often weakly to strongly greenish or bluish, abdomen sometimes in part rufous; eyes glabrous; body clothed with fine, pale setae which are mostly subappressed except more erect and bristling on the abdomen, temples, and propleura; middle tibiae of female spinose, hind tibiae of female and tibiae of male also sometimes spinose. Mandibles of male terminating in five small, sharp teeth, those of female with from three to five apical teeth and also often with a subapical tooth on the lower margin; malar space short, about as in *Trichotepyrus*; antennal scrobes not margined in the known American species; third antennal segment of male of very variable length, but always quite distinctly separated from the fourth segment. Pronotum rather long, its posterior margin not paralleled by a foveolate groove; mesoseutum more or less transversely depressed in the females of most species; notauli strong, reaching anterior margin usually only as very fine lines; scutellar groove slender and arcuate or sometimes rather straight and much broadened on each side, in a few species merely forming a thin line connecting large lateral pits; propodeal disc with from three to seven longitudinal carinae, its postero-lateral angles always strongly foveolate. Claws dentate, bifid, or trifid.

Remarks.—As mentioned in the introduction, *Chlorepyris* is here redefined in a somewhat broader sense than Kieffer's. There are three species-groups, of which the third (the *viridissimus* group) more or less approximates *Chlorepyris* in Kieffer's sense.

KEY TO SPECIES OF SUBGENUS *CHLOREPYRIS**Females*

1. Lower mesopleural fovea well defined, fully outlined or with the upper margin indistinct on the middle fourth (Figs. 29, 30); mandibles with the preapical tooth on the lower margin small and inconspicuous (Fig. 49); species of black, non-metallie coloration (*Lobatifrons* group)

- Lower mesopleural fovea poorly defined, its upper margin completely undefined for at least the middle third (Figs. 31-36); mandibles with a strong, sharp tooth on the lower margin (Figs. 50-54); color variable 4
2. Wings strongly suffused with yellowish; LFW at least 4.5 mm; front broad, WF 1.25-1.50 x HE (Fig. 11); OOL more than 2.0 x WOT; lower mesopleural fovea strongly outlined (Fig. 29) 24. *luteipennis* n. sp.
Wings somewhat clouded, barely if at all yellowish; LFW 3.0-3.8 mm; OOL less than 2.0 x WOT, sometimes only slightly so; lower mesopleural fovea not always fully defined above (Fig. 30) 3
3. Mandibles mostly pale ferruginous, legs also of this color except femora sometimes darker, coxae fuscous; ocellar triangle fairly broad, front angle only slightly less than a right angle 27. *quinquelineatus* Kieffer
Mandibles and legs mostly black; front with some strong punctures on the lower part, the punctures smaller and much more widely spaced above; ocellar triangle compact, front angle much less than a right angle (Fig. 12) 28. *nigerrimus* n. sp.
4. Head well developed in front of eyes, the antennae inserted well below bottoms of eyes (WH less than 1.05 x LH, rarely up to 1.08 x LH) (Figs 13, 14); upper mesopleural fovea small, ovoid, at most about 2.5 x as long as wide (Figs. 31-33); claws dentate (*Muscarius* group) 5
Head very short in front of eyes, antennae arising only slightly below bottoms of eyes, clypeus barely protruding beyond antennal bases (WH at least 1.07 x LH, up to 1.20 x LH (Figs. 15, 16); upper mesopleural fovea elongate, 2-5 x as long as wide (Figs. 34-36); head and thorax with metallic blue or green coloration (*Viridissimus* group) 9
5. Head and thorax black, without metallic colors; scutellar groove very slender, curved backward but barely widened at each end; front femora strongly incrassate 6
Head and thorax weakly to strongly reflecting metallic blue or green; scutellar groove much widened at each end, appearing as a slender line connecting two pits 7
6. Head and thoracic dorsum strongly shining, obscurely alutaceous; upper margin of lower mesopleural fovea defined in front and behind (Fig. 31); OOL 1.40-1.55 x WOT; LFW 3.8-4.2 mm 29. *muscarius* (Westwood)
Head and thoracic dorsum (especially the latter) moderately shining, quite distinctly alutaceous; upper margin of lower mesopleural fovea not at all defined (Fig. 32); OOL 1.20-1.33 x WOT; LFW 3.2-3.3 mm 31. *origenus* Kieffer
7. Legs rufous except the coxae black; length about 4 mm; head metallic blue, thoracic dorsum green with bluish reflections 35. *metallicus* Kieffer

- Legs with femora at least partially fuscous and front femora usually with metallic reflections; length 4.5-7.0 mm 8
8. Head and thorax with dull olive-green reflections; propodeal disc 1.25-1.36 x as wide as long; front with very small punctures which are separated by several times their own diameters 33. *virescens* n. sp.
- Head and thorax bright bluish green; propodeal disc only 1.15 x as wide as long; front with strong punctures which are separated by 2-3 x their own diameters 34. *viridis* (Cameron)
9. Propodeum black, without metallic reflections, contrasting to head and thoracic dorsum, which are greenish 10
- Propodeum bluish, blue-green, or violet, either of the same color or contrasting to the thoracic dorsum 11
10. Head and thoracic dorsum with dull olive-green reflections; propodeum elongate, 1.25-1.28 x as wide as long; tooth of claws acute, sloping outwards slightly; LFW 3.0-3.5 mm 36. *subviridis* (Kieffer)
- Head and thorax intense, brilliant green; propodeum transverse, 1.38-1.45 x as wide as long; tooth of claws somewhat blunt, sloping outward strongly (Fig. 66); LFW 4.0-5.5 mm 38. *viridissimus* (Kieffer)
11. Legs largely ferruginous except for coxae and hind femora; upper mesopleural fovea only about twice as long as high; propodeum violaceous, contrasting to the brilliant green head and thorax 39. *fulgens* (Brues)
- Legs variable, but the front femora always dark and with strong bluish reflections; upper mesopleural fovea at least 3 x as long as high (Figs. 35, 36); propodeum blue or blue-green, contrasting at most slightly with the head and thoracic dorsum, which are more or less bluish, blue-green, or violaceous 12
12. Legs ferruginous except for the coxae and the front femora; LFW 3.5 mm; front sparsely punctate, mesoseutum with punctures only along the notauli and parapsidal furrows; apical 4 of abdomen ferruginous 40. *tricolor* n. sp.
- Legs mostly dark, the hind femora black and with bluish reflections like the front femora; LFW 4.5-4.7 mm; front and thoracic dorsum wholly covered with small punctures; tip of abdomen weakly suffused with brownish 41. *violaceus* n. sp.

Males

1. Third antennal segment not reduced, distinctly longer than wide, much longer than second segment and nearly or quite as long as fourth (Figs. 71, 72); lower mesopleural fovea fully outlined or the upper margin indistinct on the middle fourth (as in Figs. 29, 30) (*Lobatifrons* group) 2
- Third antennal segment small, transverse, wider than long, much shorter than fourth segment (Figs. 19-24, 73); lower mesopleural fovea broadly incomplete above (Figs. 37-42) 5

2. Propodeum with five discal carinae 3
 Propodeum with seven discal carinae, five parallel carinae medially
 and two more oblique carinae laterad of these 4
3. Lower mesopleural fovea fully enclosed (as in Fig. 29); LFW 3.3-4.0
 mm; front evidently alutaceous 24. *luteipennis* n. sp.
 Lower mesopleural fovea with its upper margin indistinct on the
 middle third (as in Fig. 30); LFW under 3.0 mm; front strongly
 polished, at most obscurely alutaceous 27. *quinquelineatus* Kieffer
4. Propodeum very short, transverse, 1.9 x as wide as its median length;
 tip of abdomen suffused with dull ferruginous 25. *lobatifrons* Kieffer
 Propodeum more elongate, measuring 1.6-1.7 x as wide as long; apical
 third of abdomen bright ferruginous 26. *septemlineatus* Kieffer
5. Upper mesopleural fovea small, completely enclosed (Fig. 37); species
 of black coloration 6
 Upper mesopleural fovea elongate, open behind (Figs. 38-42); black
 or with metallic colors 7
6. Head very broad (WH 1.12-1.20 x LH) (Fig. 19); front polished
 and only very obscurely punctate, mesopleura impunctate or nearly so
 29. *muscarius* (Westwood)
 Head moderately broad (WH 1.07 x LH) (Fig. 20); front with large
 punctures, mesopleura also punctate 30. *puncticeps* n. sp.
7. Third antennal segment extremely short, about one-third the length
 of the fourth segment (Fig. 23); head and thorax blue-green, apical
 4 of abdomen ferruginous 37. *blantoni* n. sp.
 Third antennal segment at least half as long as the fourth (Figs.
 24, 73); color variable 8
8. Propodeum black; head and thorax black or various shades of blue
 or green 9
 Propodeum bluish or greenish; head and thorax also metallic, some-
 times contrasting slightly with the propodeum; notauli very broad
 behind 12
9. Head and thorax a very brilliant green or blue-green; claws strongly
 trifold, the middle ray obliquely truncate (Fig. 67); second antennal
 segment shorter than third segment (as in Fig. 24) 38. *viridissimus* (Kieffer)
 Head and thorax black or weakly to moderately bluish or greenish;
 middle ray of claws more erect and acute (Figs. 61, 63); second
 antennal segment longer than third segment (Fig. 21) 10
10. Propodeum short, measuring 1.35-1.46 x as wide as long, generally
 with a fairly wide smooth area laterad of the lateral discal carinae;
 front polished, obscurely alutaceous, with weak bluish or greenish
 reflections 33. *virescens* n. sp.
 Propodeum more elongate, 1.25-1.33 x as wide as long, generally almost
 wholly covered with sculpturing; front somewhat more evidently
 alutaceous than above 11
11. Head and thorax black and without metallic colors; scutellar groove
 rather weakly expanded at each end; OOL slightly less than WOT
 32. *vesculus* n. sp.

- Head and thorax more or less blue-green; scutellar groove much widened on the sides; OOL 1.1-1.25 x WOT, the ocelli being in a more compact triangle than above 36. *subviridis* (Kieffer)
12. Head and thorax green or blue-green, apical half of the abdomen rufous; notauli separated behind by more than half the width of one notaulus; propodeum with five discal carinae 39. *fulgens* (Brues)
- Head and thorax intensely bluish or violaceous, abdomen black; notauli unusually wide behind, separated by only a thin line; propodeum with only three well-defined discal carinae 41. *violaceus* n. sp.

TABLE V. SUMMARY OF SOME CHARACTERS OF TYPE SPECIMENS OF SPECIES OF SUBGENUS CHLOREPYRIS (♀♀)¹

Species	LFW (mm)	WH/LH	WF/HE	OOL/WOT	Propodeal disc W/L	Front femora L/W	Lower mesopl. fovea fully outlined
24. <i>luteipennis</i>	5.0	0.98	1.47	2.20	1.50	2.1	+
27. <i>quinquelineatus</i>	3.3	1.00	1.17	1.60	1.50	2.4	±
28. <i>nigerrimus</i>	3.8	1.01	1.17	1.90	1.50	2.2	±
29. <i>muscarius</i>	4.0	1.08	1.33	1.50	1.40	1.8	-
31. <i>origenus</i>	3.3	1.08	1.20	1.20	1.40	1.7	-
33. <i>virescens</i>	4.3	1.02	1.30	1.40	1.30	2.0	-
34. <i>viridis</i>	3.0	1.00	1.18	1.40	1.15	1.8	-
36. <i>subviridis</i>	3.5	1.10	1.06	1.60	1.30	2.1	-
38. <i>viridissimus</i>	4.4	1.20	1.10	1.40	1.40	2.2	-
39. <i>fulgens</i>	4.0	1.16	1.23	1.50	1.40	2.0	-
40. <i>tricolor</i>	3.5	1.12	1.18	1.70	1.35	2.0	-
41. <i>violaceus</i>	4.5	1.17	1.20	1.60	1.35	2.4	-

¹ I have omitted *metallicus* Kieffer, since I have not seen the type or any other specimens. The specimens of *muscarius* and *subviridis* considered are plesialotypes rather than holotypes; the specimen of *viridissimus* is also a plesialotype of that species as well as the type of *semiviridis* Kieffer. Five species are not known from the female sex.

TABLE VI. SUMMARY OF SOME CHARACTERS OF TYPE SPECIMENS OF SPECIES OF SUBGENUS CHLOREPYRIS (♂♂)¹

Species	LFW (mm)	WH/LH	WF/HE	OOL/WOT	Propodeal disc W/L	Antennal seg. three L/W
24. <i>luteipennis</i>	3.5	0.98	1.00	1.55	1.65	1.4
25. <i>lobatifrons</i>	3.6	0.97	0.94	1.50	1.90	1.6
26. <i>septemlineatus</i>	3.4	0.95	1.00	1.35	1.65	1.5
27. <i>quinquelineatus</i>	2.8	1.00	0.90	1.50	1.80	1.3
29. <i>muscarius</i>	3.3	1.12	1.25	1.12	1.60	0.8
30. <i>puncticeps</i>	3.8	1.07	1.36	1.10	1.45	0.6
32. <i>vesculus</i>	2.8	1.10	1.35	0.90	1.30	0.6
33. <i>virescens</i>	3.0	1.08	1.40	1.00	1.40	0.7
36. <i>subviridis</i>	2.8	1.18	1.43	1.10	1.35	0.6
37. <i>blantoni</i>	3.8	1.09	1.10	1.10	1.40	0.3
38. <i>viridissimus</i>	3.6	1.20	1.13	1.05	1.40	0.7
39. <i>fulgens</i>	3.9	1.20	1.24	1.00	1.40	0.7
41. <i>violaceus</i>	3.5	1.18	1.28	0.95	1.30	0.7

¹ The specimens treated are either holotypes (*lobatifrons*, *septemlineatus*, *muscarius*, *puncticeps*, *vesculus*, *subviridis*, *blantoni*, and *viridissimus*), allotypes (*luteipennis*, *virescens*), or plesialotypes (*quinquelineatus*, *fulgens*). Five species are not known from the male sex.

LOBATIFRONS SPECIES-GROUP

To this group are assigned five species of black coloration in which the scutellar groove is slender throughout, the head of the females more or less produced in front of the eyes, the lower mesopleural fovea well defined above except margining ridge sometimes obsolescent for a short distance. In the males, the third antennal segment is longer than wide and not notably shorter than the fourth segment; the head of the male is not or barely wider than long, the front narrow, WF not or barely exceeding HE.

24. RHABDEPYRIS (CHLOREPYRIS) LUTEIPENNIS new species

Holotype. — ♀, BRAZIL: Nova Teutonia, Santa Catarina, March 1948 (F. Plaumann) [MCZ, No. 30,951].

Description of female type. — Length 8.5 mm; LFW 5.0 mm. Black; palpi light brown; mandibles ferruginous, infuscated below; scape black, flagellum dusky castaneous, darker above than below; tegulae testaceous; coxae black, legs otherwise fusco-ferruginous except paler apically; wings subhyaline, strongly tinged with yellowish except apical third of fore wing smoky, veins and stigma light amber, translucent. Mandibles slender and rather straight, terminating in one strong tooth basad of which are four rather indistinct, blunt teeth (Fig. 49). Clypeus obtusely subangulate, with a median ridge which is nearly straight in profile. WH .98 x LH; sides of head subparallel behind the eyes, the vertex passing straight across a considerable distance above eye tops. Front broad, eyes convergent below; WF .66 x WH, 1.47 x HE; ocelli in a compact triangle far above eyes and close to vertex crest, OOL 2.2 x WOT. Front strongly shining, barely alutaceous, punctures small but sharply defined, separated by 2.4 x their own diameters below, much more widely spaced above. Antennae arising well below bottoms of eyes from beneath prominent lobes; first four segments in a ratio of about 23:5:6:9, segment three slightly wider than long, segment eleven about 1.5 x as long as wide. (Fig. 11.)

Thoracic dorsum shining and obscurely alutaceous like the front, the punctures small and widely spaced; pronotal disc about 2.5 x as long as mesoscutum; notauli attenuated and slightly diverging anteriorly; parapsidal furrows short and rather wide; scutellar groove moderately wide, deflected backward and slightly widened on each side. Propodeal disc 1.5

x as wide as long; disc with five carinae between which it is weakly transversely striate, otherwise smooth and polished; lateral carinae paralleled by a simple groove, but the sublaterals not distinct; declivity smooth except for very fine transverse striations; side-pieces with very delicate longitudinal striae. Mesopleurum polished, with small, sparse punctures; upper fovea small, ovoid; lower fovea elongate, fully outlined, much broadened on the posterior .6 (Fig. 29). Middle tibiae spinose above for their entire length; claws twice-dentate, the middle tooth short, sloping outward (Fig. 55); front femora much broadened, measuring 2.1 x as long as their maximum width.

Allotype.—♂, BRAZIL: Santarem (no further data) [USNM].

Description of male allotype.—Length 5.0 mm; LFW 3.5 mm. Head and thorax black; abdomen black except segments narrowly brownish apically, last two segments mostly brownish; palpi testaceous; mandibles light rufo-castaneous; antennae wholly and uniformly light castaneous; tegulae testaceous; coxae black, hind femora fuscous, legs otherwise bright rufo-castaneous; wings lightly tinged with yellowish brown, not darkened apically. Clypeus as described for female. WH .98 x LH, the general form and insertion of antennae as in female; WF .54 x WH, subequal to HE; OOL 1.55 x WOT. Front somewhat more evidently alutaceous and slightly more closely punctate than in female. First four antennal segments in a ratio of about 6:2:3:3, segment three about 1.4 x as long as wide, segment eleven about 1.6 x as long as wide. (Fig. 71.)

Thoracic dorsum weakly alutaceous, the pronotum more so than the mesonotum, punctures weak; features of mesonotum as in female. Propodeal disc 1.65 x as wide as long, with five carinae between which it is weakly transversely striate, elsewhere smooth and polished; declivity strongly polished, barely alutaceous; side-pieces with fine longitudinal striations. Mesopleurum weakly alutaceous, with small punctures, the foveae shaped as in the female, the two foveae separated by a broad, flat ridge. Front femora 2.1 x as long as their maximum width; middle tibiae weakly spinose; claws bifid, the inner ray close to the outer ray, obliquely truncate (Fig. 56).

Paratypes.—BRAZIL: 8 ♀♀, same data as type except various dates, September-March, 1952-'62 [MCZ, USNM, BSA, Coll. G. R. Ferguson]; 1 ♀, Urucum, Corumba, 12-19 December

1919 (C. U. Exped.) [CU]; 1 ♂, Santarem [USNM]. TRINIDAD: 1 ♂, St. Augustine, 25 July 1935 (N. A. Weber) [MCZ]. PANAMA: 1 ♀, March 1923 (no further data) [MCZ]; 1 ♂, Barro Colorado Isl., Canal Zone, 14 June 1939 (J. Zetek) [USNM]. NICARAGUA: 1 ♂, San Carlos, 1933 (Wickham Coll.) [USNM].

Variation.—The females vary in size from 7.5 to 9.5 mm, LFW from 4.5-5.5 mm. The Panama and Nicaragua specimens have the legs beyond the coxae bright rufo-ferruginous, the tip of the abdomen also suffused with this color, but they otherwise show no consistent differences from the Brazilian females. In this series WH varies from .97 to 1.00 x LH, WF from 1.25 to 1.50 x HE, OOL from 2.2 to 2.5 x WOT. The sculpturing of the propodeum and mesopleurum shows little variation throughout the series.

The Santarem male paratype is very similar to the allotype in every respect. The Trinidad and Panama males have the legs beyond the coxae and the tip of the abdomen rufo-ferruginous, as in the Central American females. These two specimens also have both the upper and lower mesopleural foveae larger than in the rest of the type series, the ridge between them narrow and round-topped. This appears to be an important difference, and it may be that these two males go with a different, as yet undiscovered, female; however, in all standard measurements they differ scarcely at all from the Santarem males (although both are slightly larger, LFW 3.9-4.0 mm). The Trinidad male is without antennae.

25. RHABDEPYRIS (CHLOREPYRIS) LOBATIFRONS Kieffer

Rhabdepyris lobatifrons Kieffer, 1910, Ann. Soc. Ent. France, 78: 297-298 [Type: ♂ (not ♀ as stated), BRAZIL: Pará (C. F. Baker) (Pomona College)]. —Kieffer, 1914, Das Tierreich, 41: 361.

? *Rhabdepyris obscuripennis* Kieffer, 1910, Ann. Soc. Ent. France, 79: 40 [Type: ♂ (?), BRAZIL: Pará (C. F. Baker) (location unknown)]. —Kieffer, 1914, Das Tierreich, 41: 359.

Description of male type.—Length 5 mm; LFW 3.6 mm. Wholly shining black except tip of abdomen suffused with dull ferruginous; palpi testaceous; mandibles light castaneous, the tips rufous; antennae wholly and uniformly bright castaneous; tegulae testaceous; legs bright testaceous except all coxae strongly infuscated with yellowish brown, veins and stigma light brown. Clypeus obtusely angulate, its median ridge very weakly

arched in profile. Head .97 x as wide as high; front rather narrow, WF .51 x WH, .94 x HE; OOL 1.50 x WOT; front angle of ocellar triangle slightly less than a right angle; distance from eye tops to crest of vertex equal to roughly .5 x HE, the vertex straight across; distance from posterior ocelli to vertex crest about equal to width of an ocellus. Front polished, very obscurely alutaceous, punctures small although sharply defined, separated by 1-2 x their own diameters except more widely spaced toward the vertex. Antennae arising from rather prominent tubercles well below bottoms of eyes; first four antennal segments in a ratio of about 12:3:7:7, segments three and four both 1.6 times as long as wide, segment eleven twice as long as wide.

Thoracic dorsum polished and very obscurely punctate, like the front, the punctures fairly strong but widely spaced, absent on the anterior part of the mesoscutum and center of the scutellum; pronotal disc 1.35 x median length of mesoscutum; notauli strong, barely diverging anteriorly, represented on the anterior half of the scutum only by hair-lines; basal scutellar groove thin, deflected backward and considerably widened on each side. Propodeum very short, the disc 1.9 x as wide as its median length; disc with seven carinae, five of them close together, straight, and nearly complete (the median carina complete), the other two spaced more widely to the sides, arching mesad apically and stopping well short of the transverse carina; disc obscurely striate between the carinae, elsewhere smooth and polished; sublateral carinae absent; posterior corners foveolate. Mesopleurum wholly moderately alutaceous, weakly shining; upper fovea small; lower fovea elongate, weakly constricted in the middle, fully outlined above and below. Middle tibiae weakly spinose; claws bifid.

Remarks.—The type of Kieffer's *obscuripennis* is probably lost. Kieffer did not state the sex in his original description, but in 1914 he indicated questionably that it was a male. One notes that the type locality, size, and color are essentially the same in the types of *lobatifrons* and *obscuripennis*, and no striking differences are apparent from Kieffer's descriptions except that the wings of the latter are "d'un brun sombre." The wings are distinctly tinged with yellowish brown in the type of *lobatifrons*, and I question that the other type is very different. In 1914, Kieffer keyed out *obscuripennis* as having spines on the middle tibia, *lobatifrons* as lacking spines, but

examination of the type of *lobatifrons* reveals that spines are present. Kieffer stated that *lobatifrons* has 5 parallel carinae on the propodeum; he neglected to mention that there are two additional, more oblique discal carinae. I suggest that *lobatifrons* and *obscuripennis* be regarded as probable synonyms at least until the type of *obscuripennis* is found.

26. RHABDEPYRIS (CHLOREPYRIS) SEPTEMLINEATUS Kieffer

Rhabdepyris septemlineatus Kieffer, 1906, Berlin. Ent. Zeitsch., 50: 250

[Type: ♂, NICARAGUA: Granada (C. F. Baker) (Pomona Coll.)]

—Kieffer, 1914, Das Tierreich, 41: 361.

Description of male type.—Length 4.1 mm; LFW 3.4 mm. Head, thorax, and basal three segments of abdomen shining black, apical four segments of abdomen ferruginous; mandibles yellowish brown, darker basally and apically; antennae light ferrugino-castaneous, somewhat infuscated on apical half; tegulae testaceous; coxae black, femora ferrugino-castaneous, legs otherwise light yellowish brown; wings subhyaline, with dark setulae, veins and stigma brown. Clypeus not prominent, its apical margin obtusely subangulate, median carina not arched in profile. WH .95 x LH; WF .56 x WH, subequal to HE; inner orbits converging below; distance from eye tops to vertex crest equal to slightly over half HE, vertex straight across; ocelli in about a right triangle far above eye tops and close to vertex crest; OOL 1.35 x WOT; hind ocelli removed from vertex crest by less than their own diameter. Front strongly polished, weakly alutaceous on lower sides only, punctures small but fairly prominent, on lower front separated by about their own diameters, on upper front and vertex separated by 2–4 x their own diameters. First four antennal segments in a ratio of about 25:7:14:14, segment three about 1.5 x as long as thick, segment eleven about 1.7 x as long as thick; pubescence moderately coarse, subappressed, somewhat golden, erect setae short but fairly numerous.

Pronotal disc not sharply differentiated from collar, about 1.3 x as long as mesoscutum, with smooth contours, weakly alutaceous and with distinct, well separated punctures. Mesoscutum strongly polished, scarcely alutaceous, weakly transversely depressed posteriorly; parapsidal furrows very short, occupying the posterior third of the mesoscutum only, notauli weakly diverging anteriorly, attenuate anteriorly, occupying the posterior half of the scutum. Scutellar disc weakly alutaceous, with a few

punctures; basal groove narrow, of uniform width throughout but distinctly deflected backward on each side. Propodeal disc quadrate, 1.65 x as wide as long, lateral and transverse posterior carinae very strong; median portion of disc with five closely parallel carinae which are complete or nearly so, also with two additional carinae laterad of these, extending only slightly more than half the length of the disc; disc otherwise polished and with only some very weak sculpturing; side-pieces weakly longitudinally striolate. Mesopleurum weakly alutaceous, with a well-defined, elongate lower fovea which is widely separated from the small upper fovea (much as in *luteipennis*, Fig. 29). Claws bifid, inner ray truncate; middle tibiae with a few spines; front femora 2.1 x as long as their maximum width.

Additional specimen examined. — PANAMA: 1 ♂, Barro Colorado Isl., Canal Zone, 11 February 1955 (C. Rettenmeyer) [KU].

Variation. — The Panama male is slightly larger than the type and has the front and hind femora moderately infuscated, but it is otherwise very similar, the apical .4 of the abdomen being bright ferruginous as in the type. In this specimen WH is .98 x LH, WF .92 x HE, OOL 1.50 x WOT; the lateral pair of discal carinae extend for about .8 the length of the propodeum.

27. RHABDEPYRIS (CHLOREPYRIS) QUINQUELINEATUS Kieffer

Rhabdepyris quinqueineatus Kieffer, 1906, Berlin. Ent. Zeitschr., 50: 249 [Type: ♀, NICARAGUA: Chinandega (C. F. Baker) (Pomona Coll.)]. — Kieffer, 1914, Das Tierreich. 41: 360.

Description of female type. — Length 5 mm; LFW 3.3 mm. Body shining black, without metallic hues, last two abdominal segments weakly suffused with reddish brown; mandibles and antennae rather uniformly reddish brown, antennal tubercles also suffused with this color; tegulae testaceous; coxae black, legs otherwise reddish brown; fore wing weakly clouded, more noticeably so about the radial vein, veins and stigma brown. Mandibles with five teeth, the basal three teeth very small (essentially as figured for *luteipennis*, Fig. 49). Clypeus forming a subangulate median process, its median elevation rather weak. Head about as wide as high; inner orbits convergent below; WF .61 x WH, 1.17 x HE; vertex straight across a short distance above eye tops, distance from eye tops to vertex crest about half HE. Ocelli in a broad triangle close to vertex

crest; OOL 1.6 x WOT; posterior ocelli removed from vertex crest by about their own diameters. Front shining, obscurely alutaceous, with strong punctures which are separated by 1-2 x their own diameters (much more widely spaced above). First four antennal segments in a ratio of about 19:5:5:7, segment three only 1.2 x as long as thick, segment eleven 1.4 x as long as thick.

Pronotum large, with even contours, anteriorly not sharply separated from collar, on the median line 1.8 x as long as mesoscutum; pronotum strongly shining and with large, well-separated punctures. Mesoscutum with a shallow transverse impression, shining and almost impunctate; notauli attenuate and diverging anteriorly; scutellar disc rather flat, basal groove narrow, of even width throughout, its ends turned obliquely backward. Propodeal disc 1.5 x as wide as long, its lateral and posterior carinae strong, also with five carinae on the median area, all of them reaching the posterior margin or nearly so; disc weakly transversely striate between the carinae, on the sides smooth and strongly polished. Mesopleurum strongly polished, with scattered small punctures, lower fovea distinct, about as in *septemlineatus*. Claws bifid, inner ray truncate (Fig. 57); front femora 2.4 x as long as wide; middle tibiae spinose.

Plesiallotype. — ♂, EL SALVADOR: San Salvador, 3-4 May 1958 (O. L. Cartwright) [USNM].

Description of male plesiallotype. — Length 3.7 mm; LFW 2.8 mm. Black, apical two abdominal segments suffused with reddish brown; palpi testaceous; mandibles pale castaneous, the teeth rufous; antennae wholly light brown, except suffused with darker brown on upper surface; coxae black, legs otherwise bright rufo-castaneous; wings subhyaline, veins yellowish toward base of wing. Clypeus obtusely angulate, with a low median ridge. Head as wide as high; eyes strongly convergent below, WF only .49 x WH, .90 x HE; OOL 1.50 x WOT. Front strongly shining, barely alutaceous, with small punctures which are close below, widely spaced above. First four antennal segments in a ratio of about 18:6:10:11, segment three 1.3 x as long as wide (Fig. 72), segment eleven twice as long as wide. Thoracic dorsum strongly polished, non-alutaceous, with small punctures; features as in female. Propodeum very short, the disc 1.8 x as wide as long, features as in female. Mesopleurum shining, with a few small punctures; lower fovea elongate, well

defined except the upper margin rather indistinct toward the middle. Claws bifid; middle tibiae with a few small spines above; front femora 2.2 x as long as wide.

Additional specimens examined.—MEXICO: 1 ♀, Medellin, Veraacruz (C. F. Baker no. 2154) [USNM]; 1 ♂, Progreso, Yucatan, 23 July 1962 (H. E. Evans) [MCZ].

Variation.—In both of the Mexican specimens, the upper margin of the lower mesopleural fovea is indistinct in the middle. The female differs from the type also in having the third antennal segment slightly wider than long and the femora dark brown, contrasting to the light brown tibiae and tarsi. The Yucatan male also has dark brown femora, but the antennae are lighter than in the plesiallotype; in this specimen the propodeum is also 1.6 x as wide as long.

28. RHABDEPYRIS (CHLOREPYRIS) NIGERRIMUS new species

Holotype.—♀, BOLIVIA: Santa Cruz, Santiago, November 1959 (no collector given) [KU].

Description of female type.—Length 6.5 mm; LFW 3.8 mm. Wholly black, shining, the apical abdominal tergite suffused with dark brown; palpi brown; mandibles black, flagellum dark brown above, light brown below; tegulae brownish fuscous; legs black except apices of femora and tibiae suffused with dark ferruginous, tibial spines and spurs light ferruginous, tarsi castaneous; wings hyaline except fore wing lightly clouded along major veins and on apical .6, more especially around the radial vein, veins and stigma dark brown except veins yellowish at extreme base of wing. Mandibles with a large apical tooth and four small, blunt teeth in an oblique series basad of this, with a small tooth on the lower margin (differing in no important way from those of *luteipennis*, Fig. 49). Clypeus broadly angulate, its median ridge not arched in profile. WH 1.01 x LH; eyes convergent below, WF .61 x WH, 1.17 x HE; front angle of ocellar triangle less than a right angle, OOL 1.9 x WOT. Distance from eye tops to vertex crest about .5 x HE; vertex nearly straight across. Front polished, very obscurely alutaceous; lower part of front with a median streak and with some large, well-spaced punctures, but the punctures on the upper half of the front and on the vertex weaker and very widely spaced. First four antennal segments in a ratio of about 37:8:8:10, segments three slightly wider than long, segment four slightly longer than wide, segment eleven 1.3 x as long as wide. (Fig. 12.)

Pronotal disc about 1.7 x as long as mesoscutum, strongly polished and with small, widely spaced punctures; mesoscutum very weakly alutaceous, with a strong transverse depression; notauli complete, diverging and attenuate toward the front; scutellar groove slender, deflected backward at each end. Propodeal disc 1.5 x as wide as long, with five carinae between which it is strongly transverse striate, the disc elsewhere smooth and shining; declivity alutaceous, without transverse ridges; side-pieces very finely longitudinally striate. Mesopleurum polished, with scattered small punctures; upper fovea small, only slightly longer than high; lower fovea rather strongly defined except upper margin indistinct on the middle third (Fig. 30). Front femora 2.2 x as long as wide; middle tibiae strongly spinose; claws with the tooth short but sloping outward strongly (Fig. 58).

Remarks. — This species is closely related to the preceding and may only be an extreme variant of it. However, the only known specimen is from a locality far south of the southernmost record for *quinquelineatus* (Nicaragua).

MUSCARIUS SPECIES-GROUP

To this group I assign seven species, four of them without metallic colors, the other three with the head and thorax weakly to strongly reflecting blue or blue-green. The head of the female is strongly developed below the eyes as in the preceding group, the antennae arising well below the bottoms of the eyes. However, the third antennal segment of the male is very much shorter than in that group. The claws are dentate or weakly bifid, the scutellar groove variable and generally somewhat intermediate between that of the preceding and the following species-groups. The mandibles of the female have a strong preapical tooth on the lower margin.

29. RHABDEPYRIS (CHLOREPYRIS) MUSCARIUS (Westwood)

Epyris muscarius Westwood, 1874, Thesaurus Ent. Oxoniensis, p. 159, pl. 29, fig. 8 [Type: ♂, BRAZIL: Amazonia, 1861 (Bates) (HCOU)].

Rhabdepyris microstoma Kieffer, 1910, Ann. Soc. Ent. France, 78: 296-297 [Type: ♂ (not ♀ as stated), BRAZIL: Pará (C. F. Baker) (Pomona Coll.)]. New synonymy.

Rhabdepyris (Rhabdepyris) microstoma [sic] Kieffer, 1914, Das Tierreich, 41: 361-362.

Rhabdepyris (Rhabdepyris) muscarius Kieffer, 1914, *ibid.*, p. 362.

Plesiallotype: ♀, BRAZIL: Chapada, August (Acc. no. 2966) [CM].

Description of female plesiallotype.—Length 6.0 mm; LFW 4.0 mm. Black except extreme tip of abdomen suffused with brownish; palpi light brown, mandibles rufo-testaceous, black toward base; scape dark brownish fuscous, flagellum brown, darker above than below; tegulae testaceous; coxae black, femora dark brown, legs otherwise light castaneous; wings lightly tinged with yellowish brown, veins yellowish brown, stigma dark brown. Body setae light golden brown, short but rather conspicuous against the black integument. Mandibles with six teeth, the basal three teeth small, the next tooth broad, deeply separated from the large apical tooth, also with a sharp tooth on the outer margin at the base of the apical tooth (Fig. 50). Clypeus very short, angulate apically, the angle slightly greater than a right angle. WH 1.08 x LH; front broad, WF .66 x WH, 1.33 x HE; ocelli in about a right triangle, OOL 1.5 x WOT. Vertex broad, nearly straight, distance from eye tops to vertex crest only about one-third x HE. Front shining, barely alutaceous, punctures small, separated by 3-5 x their own diameters. Antennae arising from below frontal lobes, well below bottoms of eyes; first four antennal segments in a ratio of about 37:9:6:12, segment three .7 as long as wide, segment four 1.2 x as long as wide. (Fig. 13.)

Thoracic dorsum shining like the front, punctures small and sparse; pronotum 1.6 x as long as mesoscutum; mesoscutum transversely depressed on sides; notauli broad, attenuate and diverging toward the front; parapsidal furrows linear, extending for half the length of the mesoscutum; scutellar furrow very slender, slightly enlarged at each end. Propodeal disc 1.4 x as wide as long, with five discal carinae between which it is transversely striate, elsewhere smooth except for foveolate grooves along the lateral and posterior carinae; declivity striate only on the lower third; side-pieces shining, with only very fine sculpturing. Mesopleurum weakly alutaceous, with a few small punctures; lower fovea broadly incomplete above (Fig. 31). Front femora very strongly incrassate, only 1.8 x as long as wide; middle and hind tibiae spinose; claws dentate (Fig. 59).

Description of male type.—Length 5.5 mm; LFW 3.3 mm. Black; palpi and mandibles largely testaceous; antennae light castaneous, both scape and flagellum suffused with fuscous on the upper side; tegulae testaceous; legs pale castaneous, except

the front coxae fuscous, the other coxae and all the femora suffused with brownish; wings lightly, uniformly tinged with brownish, the veins and stigma light brown. Body with rather coarse, pale setae. Clypeus forming a sharp obtuse angle, the median ridge not arched in profile. Head 1.12 x wide as high; front broad, WF .64 x WH, 1.25 x HE; OOL 1.12 x WOT; front angle of ocellar triangle slightly less than a right angle; ocelli moderately large, the hind ocelli separated from the vertex crest by about their own diameters. Vertex passing straight across only a short distance above the eyes, distance from eye tops to vertex crest less than WOT. Front strongly polished, non-alutaceous except weakly so near the bottom, with minute punctures which are separated by 3-4 x their own diameters, except more crowded below. Antennae arising slightly below bottoms of eyes, first four antennal segments in a ratio of about 18:8:5:9, segment three .8 x as long as wide, segment four 1.5 x as long as wide, segment eleven about twice as long as wide; flagellum with rather coarse, semi-erect setulae and a few fully erect setae. (Fig. 19.)

Thoracic dorsum polished, non-alutaceous, the punctures very small; maximum width of pronotal disc nearly twice its median length, the latter 1.3 x the median length of the mesoscutum; notauli strong on the posterior two-thirds of the mesoscutum, continued to the front margin only as thin lines; basal scutellar groove deep but thin, slightly expanded and deflected backward on each side. Propodeal disc 1.6 x as wide as long; disc with five strong carinae, of which the middle three are complete and the others nearly so; surface weakly transversely ridged between the discal carinae, elsewhere very smooth and polished; sublateral carina absent, but the extreme sides with a narrow groove; posterior angles foveolate. Mesopleurum shining, non-alutaceous, the upper margins of the lower fovea obsolete (Fig. 37). Middle tibiae with some fairly thick setae above, but not really spinose; claws bifid (Fig. 60).

Specimens examined. — BRAZIL: 1 ♀, 1 ♂, Chapada, March, August [CM]; 2 ♂ ♂, Pará (C. F. Baker) [Pomona Coll., CU]; 1 ♂, Amazonia (Bates) [Type, HCOU]; 2 ♀ ♀, Nova Teutonia, Santa Catarina, September, October 1957 (F. Plaumann) [Coll. G. R. Ferguson]. PERU: 1 ♂, Quincemil, Dept. Cuzco, 750 m, 16 October 1962 (L. Peña) [MCZ]. COLOMBIA: 1 ♂, Bonda, August [CM]. PANAMA: 2 ♀ ♀, Barro Colorado Isl., Canal Zone, March (Bradley, Rettenmeyer) [CU, KSU]; 1 ♂, Pacora,

Canal Zone, 13 May 1953 (F. S. Blanton) [USNM]. COSTA RICA: 1 ♂, La Fortuna, San Carlos, Alajuela Prov., 19 February 1964 (H. E. Evans) [MCZ]. MEXICO: 1 ♂, Atoyac, Veracruz, April (H. H. Smith) [BMNH].

Variation.—Although I did not compare the types of *muscarius* and *microstoma* directly, my notes leave little doubt that they represent the same species; the type of *microstoma* is slightly smaller (LFW 2.8 mm). The males from Chapada and from Quincemil, Peru, are larger (LFW 3.7 mm) but very similar in all details. The males from Colombia, Panama, Costa Rica, and Mexico are unusually small (LFW 2.2-2.8 mm) and have a relatively more elongate propodeum (1.3-1.5 x as wide as long) and a slightly broader front (WF 1.3-1.4 x HE). The Panama specimen has the apical third of the abdomen rufous, while the Colombia specimen has the antennae wholly testaceous.

One of the Santa Catarina females is rather small (LFW only 3.0 mm) but is colored like the plesiallotype and has similar standard measurements. The other is larger (LFW 4.7 mm) and has the front femora wholly bright ferruginous, the head somewhat longer (WH 1.02 x LH), the front broad (WF 1.45 x HE), the propodeal disc only 1.3 x as wide as long. The Panama females also differ slightly from the plesiallotype. Both have the apical third of the abdomen rufous, the head a little less broad (WH 1.02 x LH), the front wider (WF 1.40-1.47 x HE), the propodeum less broad (1.30-1.35 x as wide as long). However, the mandibles and all other important features agree well with the plesiallotype. These females are comparable to the plesiallotype in size (LFW 3.8, 4.2 mm) even though the males from this area are very small. It is possible that I am confusing more than one species under the name *muscarius*, but I do not think so. Much of the variation parallels the variation in *luteipennis*.

30. RHABDEPYRIS (CHLOREPYRIS) PUNCTICEPS new species

Holotype.—♂, BRAZIL: Nova Teutonia, Santa Catarina, February 1963 (F. Plaumann) [MCZ, No. 30.952].

Description of male type.—Length 5.0 mm; LFW 3.8 mm. Body shining black except apical two abdominal segments suffused with reddish brown; palpi straw colored; mandibles black except apical third testaceous, teeth rufous; antennae wholly light brown below, dark brownish fuscous above except segments two and three wholly castaneous; tegulae light brown; coxae

and middle and hind femora black, hind tibiae somewhat infuscated, legs otherwise bright rufo-castaneous; wings faintly tinged with yellowish brown, apical half of fore wing slightly more heavily clouded. Body setae rather coarse, light brown. Clypeus forming a sharp right angle, its median carina not arched in profile. Head 1.07 x as wide as high; WF .67 x WH, 1.36 x HE; OOL 1.10 x WOT, the front angle of the ocellar triangle very slightly less than a right angle. Vertex passing straight across a short distance above eye tops. Front strongly polished, non-alutaceous except weakly so below, wholly covered with strong punctures which are separated by 1.5-3 x their own diameters, except rather sparse in front of the anterior ocellus. First four antennal segments in a ratio of about 26:8:5:15, segment three nearly twice as wide as long, segment four about 1.5 x as long as wide, segment eleven 2.2 x as long as wide. (Fig. 20.)

Thoracic dorsum wholly polished and non-alutaceous, punctures small but quite strong, rather sparse on the mesoscutum and absent from the center of the scutellar disc; notauli strong on the posterior two-thirds of the mesoscutum, continued to the front margin as thin lines; basal scutellar groove deep but thin, slightly expanded and deflected backward at each end. Propodeal disc 1.45 x as wide as long, with five strong carinae laterad of which it is smooth and polished; declivity with numerous transverse ridges; side-pieces weakly aciculate. Mesopleurum shining, non-alutaceous, with sparse punctures, the upper margins of the lower fovea obsolete except at the ends. Front femora 2.15 x as long as wide; middle tibiae not spinose; claws bifid.

Remarks. — This species is known to me from the type only.

31. RHABDEPYRIS (CHLOREPYRIS) ORIGENUS Kieffer

Rhabdepyris origenus Kieffer, 1911, Ann. Soc. Sci. Bruxelles, 35: 222

[Type: ♀, MEXICO: Chilpancingo, Guerrero, 4600 feet, June (H. H. Smith) (BMNH)]. — Kieffer, 1914, Das Tierreich, 41: 359.

Description of female type. — Length 5.3 mm; LFW 3.3 mm. Black, except tip of abdomen suffused with dark brown; palpi light brown; mandibles ferruginous except black at base; antennae ferruginous except under side of flagellum infuscated for its entire length; legs bright ferrugino-castaneous except coxae strongly infuscated; wings subhyaline. Mandibles essentially as described and figured for *muscarius* (Fig. 50). Clypeus forming a rather sharp angle medially, with a strong median ridge. WH 1.08 x LH; WF .66 x WH, 1.20 x HE; ocelli in a

right triangle close to vertex crest, OOL 1.20 x WOT. Vertex passing straight across a short distance above the eye tops, distance from eye tops to vertex crest only about one-third x HE. Front uniformly alutaceous, moderately shining, punctures small but numerous, separated by 1.5-2.5 x their own diameters. First four antennal segments in a ratio of about 36:10:6:11, segment three 0.7 x as long as wide, segment eleven 1.1 x as long as wide.

Pronotal disc about 1.5 x as long as mesoscutum, shining and weakly alutaceous, with small punctures. Mesoscutum with the notauli complete, linear, diverging anteriorly; parapsidal furrows also linear, extending for about half the length of the scutum; scutellar groove slender, slightly widened and deflected backward at each end. Propodeal disc 1.4 x as wide as long, with five carinae, the disc transversely striate between the carinae, elsewhere merely weakly alutaceous; declivity transversely striate below; side-pieces polished and with only some very fine surface sculpturing. Mesopleurum weakly alutaceous, weakly punctate; upper fovea small, lower fovea not at all defined on the upper margin (Fig. 32). Front femora greatly swollen, 1.7 x as long as their greatest width; claws dentate; middle tibiae moderately spinose.

Additional specimen examined. — MEXICO: 1 ♀, San Blas, Nayarit, 22 March 1962 (F. D. Parker) [UCD].

Variation. — The Nayarit female is of the same size as the type, but differs slightly in color: the apical 2.5 segments of the abdomen are ferruginous, the antennae somewhat lighter and more uniformly ferruginous than in the type. Standard measurements of this specimen are as follows: WH 1.03 x LH, WF 1.33 x HE, OOL 1.30 x WOT; propodeum 1.22 x as wide as long.

32. RHABDEPYRIS (CHLOREPYRIS) VESCULUS new species

Holotype. — ♂, BRAZIL: Nova Teutonia, Santa Catarina, 14 January 1962 (F. Plaumann) [MCZ, No. 30,953].

Description of male type. — Length 4.6 mm; LFW 2.8 mm. Entirely black; palpi testaceous; mandibles testaceous except black at extreme base, teeth rufous; antennae testaceous except scape somewhat infuscated, especially above, flagellum slightly darker on the upper side than below; tegulae testaceous; coxae black, femora dark brownish fuscous, trochanters and hind tibiae somewhat infuscated, legs otherwise testaceous; wings subhyaline, veins and stigma brown. Mandibles with five teeth,

the basal four teeth small and sharp; clypeus obtusely angulate, with a median ridge which is not arched in profile. Head rather broad, WH 1.10 x LH; WF .66 x WH, 1.35 x HE; ocelli moderately large, in about a right triangle, the posterior ocelli slightly less than their own diameters from the vertex crest; OOL 0.90 x WOT. Vertex very broadly rounded, almost straight; distance from eye tops to vertex crest about one-third x HE. Front wholly alutaceous, moderately shining, with small punctures which are separated by 1.5-2.5 x their own diameters, except sparse in front of ocellar triangle. Antennae arising well below bottoms of eyes, unusually short, first four segments in a ratio of about 15:5:4:6, segment three .6 x as long as wide, segment four about as long as wide, segment eleven 1.4 x as long as wide; flagellar pubescence semi-erect, pale. (Fig. 22.)

Thoracic dorsum alutaceous and with small punctures like the front; pronotum about 1.6 x as long as the mesoscutum; notauli rather wide, much tapered and divergent anteriorly; scutellar groove relatively short and wide, much wider on the sides than medially. Propodeal disc 1.3 x as wide as long, with five discal carinae and also with two more rounded ridges on each side between the lateral discals and the laterals, the surface rather irregularly transversely striate between the carinae and ridges, wholly covered with sculpturing; declivity and sidepieces both with strong horizontal ridges. Mesopleurum weakly alutaceous, without distinct punctures; lower fovea very broadly open above; upper fovea elongate, opening downward posteriorly (Fig. 38). Front femora 2.3 x as long as wide; middle femora not spinose; claws dentate, the tooth acute, sloping outward somewhat (Fig. 61).

Paratypes.—BRAZIL: 5 ♂♂, same data as type except September, November, December, January, 1951, 1962, 1963 [MCZ, USNM, Coll. G. R. Ferguson].

Variation.—The paratypes are very similar to the type in color except that the antennae tend to be darker in some specimens, wholly dull brownish in one. The sculpturing is very similar except that one specimen has only one ridge between the lateral discal and lateral carinae of the propodeum, leaving a narrow smooth area on each side. LFW varies from 2.3 to 2.8 mm; WH/LH varies from 1.07 to 1.10; WF/HE varies from 1.28 to 1.44 x HE; the propodeal disc varies from 1.28 to 1.33 x as wide as long. Throughout the series WOT exceeds OOL very slightly.

33. RHABDEPYRIS (CHLOREPYRIS) VIRESCENS new species

Holotype. — ♀, BRAZIL: Nova Teutonia, Santa Catarina, August 1963 (F. Plaumann) [MCZ, No. 30,954].

Description of female type. — Length 6.0 mm; LFW 4.3 mm. Head and thorax black, with dull olive-green reflections; propodeum black; abdomen shining black except the apical two segments suffused with rufo-testaceous; palpi straw-colored; mandibles rufo-castaneous except black at extreme base; scape bright rufo-castaneous, flagellum light brown below, somewhat dusky above; tegulae testaceous; legs bright ferruginous except front and hind coxae black, middle coxae and front and hind femora partially suffused with black; wings lightly infuscated, the fore wing with a darker cloud below the marginal cell; veins brown except testaceous toward base of wing. Mandibles with a small subapical tooth on the lower margin, a large apical tooth, and four small teeth which are close together and separated from the apical tooth by a small cutting edge (Fig. 51). Clypeus obtusely angulate, its median ridge nearly straight in profile. WH 1.02 x LH; front broad, WF .69 x WH, 1.30 x HE; front angle of ocellar triangle very slightly less than a right angle, OOL 1.40 x WOT. Vertex passing straight across, distance from eye tops to vertex crest only .3 x HE. Front shining, weakly alutaceous, with very small punctures which are separated by 3-5 x their own diameters. Antennae arising from below frontal lobes, well below bottoms of eyes; first four segments in a ratio of about 20:5:4:6, segment three .8 as long as wide, segment four 1.2 x as long as wide, segment eleven 1.3 x as long as wide. (Fig. 14.)

Pronotum weakly alutaceous and with small punctures like the front, the median length of the disc nearly twice that of mesoscutum. Mesoscutum slightly more strongly alutaceous than pronotum, with small punctures, weakly transversely depressed; notauli rather wide, diverging and attenuate anteriorly, reaching anterior margin only as thin lines; scutellar groove rather slender, deflected sharply backward and expanded at each end. Propodeal disc 1.3 x as wide as long, with five discal carinae between which it is strongly transversely striate, between the lateral discals and lateral carinae smooth and very weakly alutaceous; declivity with strong transverse ridges on lower half; side-pieces smooth except very finely alutaceous. Mesopleurum weakly alutaceous, very weakly punctate; upper fovea ovoid,

slightly longer than high; lower fovea broadly incomplete above (Fig. 33). Front femora twice as long as wide; middle tibiae spinose; claws dentate (Fig. 62).

Allotype. — ♂, BRAZIL: same data as type except December, 1962 [MCZ].

Description of male allotype. — Length 4.5 mm; LFW 3.0 mm. Head and thorax shining black, with a weak bluish green cast; propodeum black; abdomen shining black, the apical two segments suffused with brownish; palpi straw-colored; mandibles testaceous except black at base, the teeth rufous; antennae pale castaneous except scape fuscous above, flagellum slightly infuscated above; tegulae testaceous; coxae black, femora dark brown, legs otherwise testaceous; wings very lightly tinged with brownish, somewhat more evidently so around the radial vein. Mandibles and clypeus not differing noticeably from those of *vesculus*; head much wider than high, WH 1.08 x LH; WF .68 x WH, 1.40 x HE; ocelli moderately large, in about a right triangle, OOL and WOT subequal. Vertex broadly rounded; distance from eye tops to vertex crest equal to about one-third x HE. Front strongly polished, barely alutaceous, the punctures minute and inconspicuous. First four antennal segments in a ratio of about 18:6:5:8, segment three .7 as long as wide, segment four approximately as long as wide, segment eleven about twice as long as wide; flagellar pubescence semi-erect, about .2 as long as width of flagellar segments. (Fig. 21.)

Pronotal disc slightly longer along midline than mesoscutum, obscurely alutaceous and with very small punctures. Mesoscutum strongly polished, wholly covered with minute setigerous punctures; notauli rather wide, diverging and strongly attenuated anteriorly; scutellar groove fairly wide, broadened and deflected backward at each end; center of scutellar disc polished and impunctate. Propodeal disc 1.4 x as wide as long, with five discal carinae between which it is irregularly transversely ridged; space laterad of lateral discals filled with transverse striae which are obsolescent behind; lateral and sublateral carinae present, each subtending a somewhat foveolate groove; declivity transversely ridged; side-pieces with irregular longitudinal striae which tend to be coarser below. Mesopleurum shining, obscurely alutaceous and punctate; upper fovea large and continuing on down the posterior margin of the mesopleurum; lower fovea fairly well defined, but its upper margin obsolete on the middle third (Fig. 39). Front femora 2.2 x as

long as wide; claws dentate, the tooth sloping outward (Fig. 63).

Paratypes. — BRAZIL: 5 ♀♀, 12 ♂♂, same data as type except various dates, February, March, April, June, September-December, 1938, 1952, 1953, 1961, 1962, 1964 [MCZ, BMNH, BSA, Coll. G. R. Ferguson]; 1 ♂, Corumba, May [ANSP]; 1 ♂, Santarem (no further data) [USNM]. PERU: 1 ♂, Upper Rio Pachitea, 21 July 1920 (Cornell U. Exp.) [CU]. ECUADOR: 1 ♂, Ongota, 8 km SE Tena, May 1963 (L. Peña) [MCZ]. PANAMA: 1 ♀, Puerto Bello, 21 February 1911 (E. A. Schwarz) [USNM]; 1 ♂, Barro Colorado Isl., Canal Zone, 18 July 1956 (C. W. & M. E. Rettenmeyer) [KSU].

Variation. — The topotypic female paratypes vary considerably in size (LFW 3.3-4.0 mm); WH varies from 1.00 to 1.02 x LH. The amount of infuscation of the femora is somewhat variable, but otherwise there is close agreement with the type. The Panama female has the apical 4 of the abdomen bright ferruginous; in this specimen LFW is 3.8 mm, WH/LH is 1.02, WF/HE 1.17. Otherwise the resemblance to the type is close.

The males show considerable variation and I concede the possibility that more than one species may be involved. LFW varies from 2.8 to 3.7 mm. Color of the head and thorax varies from olive-green through blue-green to a shining, metallic blue; the intensity of the metallic reflections also varies considerably. In some of the topotypes, WOT exceeds OOL slightly; in one of them the front legs are wholly pale ferruginous, while in others the legs are mostly blackish and the antennae darker than in the allotype. The Panama male has the apical third of the abdomen bright ferruginous. This specimen and those from Peru, Ecuador, and Santarem have the front relatively narrow (WF 1.15-1.25 x HE), but in the Corumba specimen the front is broad (WF 1.40 x HE); in fact the head itself is unusually broad (WH 1.20 x LH). The last-named specimen also has relatively coarser sculpturing on the propodeum, especially on the side-pieces, and in lateral view the anterior margins of the foveae on the posterior angles can be seen to be produced upward as tooth-like processes. However, tendencies in these directions can be seen in the Panama specimen; indeed, there is much variation in details of propodeal sculpturing throughout the entire series, although the shape of the propodeal disc is quite constant (1.35-1.45 x as wide as long).

The variation in the color of the abdomen in this species parallels similar variation in *luteipennis* and *muscarius*, and the other variation is not inconsistent with the patterns in those species.

34. RHABDEPYRIS (CHLOREPYRIS) VIRIDIS (Cameron)

Epyris viridis Cameron, 1888, Biol. Centr.-Amer., Hymen. I, p. 451 [Type:

♀, GUATEMALA: San Juan, Vera Paz (G. C. Champion) (BMNH)].

Rhabdepyris viridis Kieffer, 1908, Gen. Insect., 76:32.

Anisepyrus viridis Kieffer, 1914, Das Tierreich, 41: 439.

Description of female type. — Length 5.5 mm; LFW 3.0 mm. Head, pronotum, and mesopleura bright bluish green; mesonotum bright blue; propodeum black; abdomen shining black except each segment with a narrow, apical testaceous band (more noticeable ventrally) and the apical 1.5 segments mostly testaceous; palpi light brown; mandibles blackish; antennae black, scape with green reflections; middle and hind coxae and femora dark brownish-fuscous, with weak metallic reflections; tibiae and tarsi medium brown; wings subhyaline, with a faint yellowish tinge, with a strong brownish cloud just below the stigma and radial vein. Mandibles appearing tridentate, but probably not differing materially from those of related species. Clypeus with an angulate median lobe. Head about as wide as high; inner orbits subparallel below, WF .69 x WH, 1.18 x HE; ocelli in a compact triangle, front angle much less than a right angle; OOL 1.4 x WOT. Vertex passing straight across a distance above eye tops equal to about .3 x HE. Front uniformly but very weakly alutaceous, strongly shining, punctures strong, separated by 2-3 x their own diameters. First four antennal segments in a ratio of about 32:10:7:10, segment three slightly wider than long, segment eleven about as long as wide.

Pronotal disc .57 x as long as its posterior width, 1.25 x as long as mesoscutum; surface of pronotum shining, like the front, but the punctures somewhat weaker than on the front. Mesoscutum also shining, with a few punctures on the posterior half but otherwise smooth, not depressed; notauli complete, diverging and becoming more slender anteriorly; scutellar groove widened and deflected backward on each end. Propodeal disc only 1.15 x as wide as long, with five strong carinae, the surface transversely striate between the carinae, elsewhere shining; declivity

transversely striate, more especially below. Mesopleurum alutaceous although somewhat shining; upper fovea small, lower fovea large, broadly incomplete above (essentially as in *virescens*, Fig. 33). Claws dentate; front femora 1.8 x as long as their greatest width.

Remarks.—This distinctive species has not been recovered since its description in 1888.

35. RHABDEPYRIS (CHLOREPYRIS) METALLICUS Kieffer

Rhabdepyris metallicus Kieffer, 1908, Ann. Soc. Sci. Bruxelles, 32: 10 [Type: ♀, NICARAGUA: Granada (? location of type)]. —Kieffer, 1914, Das Tierreich, 41: 360.

Original description (translated and paraphrased). —Length 4 mm. Head metallic blue, pro- and mesonota metallic green with bluish reflections; abdomen black except last two segments red; mandibles and palpi red; scape blackish brown, antennae otherwise red; legs red except coxae black; wings brownish. Head subcircular, smooth and shining, with dense, fine punctures. Eyes separated from vertex crest by about one-third x HE. Third and fourth antennal segments somewhat transverse, the following segments thicker, at first transverse, then somewhat longer. Thoracic dorsum shining; pronotum punctate like the head; mesoscutum somewhat shorter than pronotum, almost impunctate; notauli wide on the posterior part, divergent and becoming very thin anteriorly. Scutellum impunctate, its groove broad and arcuate. Propodeum hardly transverse, with five discal carinae of which the middle three are parallel, the lateral ones oblique.

Remarks.—I have not been able to locate the type of this species, and I have not been able to recognize the species from the description. I would judge it to be closely related to the preceding and the following species. The metallic colors are apparently much more intense than in *subviridis*, the antennae and legs much lighter in color than in *viridis*.

VIRIDISSIMUS SPECIES-GROUP

This group includes six brilliantly green or blue species, all having the scutellar groove in the form of paired pits connected by a slender groove (*Chlorepyris* in the sense of Kieffer). The head is much wider than high in both sexes and is little developed anteriorly, the antennae arising only slightly below

the bottoms of the eyes. It is possible that *metallicus* Kieffer belongs here, but since Kieffer states that the head of that species is "fast kreisrund," I assume that it may belong near *viridis* in the preceding species-group. In the *viridissimus* group the claws of the male tend to be more or less trifid; however, there is no sharp morphological gap between the males of these two species-groups.

36. RHABDEPYRIS (CHLOREPYRIS) SUBVIRIDIS (Kieffer) new combination

Epyris subviridis Kieffer, 1911, Ann. Soc. Sci. Bruxelles, 35: 225-226
[Type: ♂, MEXICO: Teapa, Tabasco, March (H. H. Smith) (BMNH)].

Chlorepyris subviridis Kieffer, 1913, Boll. Lab. Zool. Portici, 7: 108.
—Kieffer, 1914, Das Tierreich, 41: 415.

Plesiallotype. — ♀, PANAMA: Pacora, Canal Zone, 14 May 1953 (F. S. Blanton) [USNM].

Description of female plesiallotype. — Length 5.5 mm; LFW 3.5 mm. Head and thorax black, with dull olive-green reflections; propodeum black; abdomen shining black, apical .4 ferruginous; palpi straw-colored; mandibles light castaneous, the teeth darker; antennae uniformly light castaneous; tegulae testaceous; coxae black; hind femora and outer side of front femora dark brown, legs otherwise testaceous; wings faintly tinged with yellowish brown, slightly darker around the radial vein, veins yellowish toward base of wing. Mandibles with a large subapical tooth on the lower margin, otherwise with five teeth, the basal three teeth small and rounded (Fig. 52). Clypeus obtusely subangulate, extending barely beyond the antennal insertions. WH 1.10 x LH; WF .62 x WH, 1.06 x HE; front angle of ocellar triangle much less than a right angle, OOL 1.6 x WOT. Vertex nearly straight, distance from eye tops to vertex crest about one-third x HE. Front strongly shining, very weakly alutaceous, the punctures strong, separated from one another by 1-3 x their own diameters below, much more widely spaced above. Antennae arising only slightly below bottoms of eyes, first four segments in a ratio of about 28:7:5:10, segment three about .6 as long as wide, segment four slightly longer than wide, segment eleven about as long as wide. (Fig. 15.)

Thoracic dorsum alutaceous, not as strongly shining as the front, the punctures small and well spaced; pronotum about 1.25

x as long as mesoscutum along midline. Notauli elongate, attenuate and diverging anteriorly; scutellar groove very narrow medially, connecting two oblique, elliptical pits. Propodeal disc 1.30 x as wide as long, with five discal carinae, smooth and polished between the lateral discals and the laterals; declivity polished, with some transverse ridges below; side-pieces shining and with very fine surface sculpturing. Mesopleurum alutaceous and with numerous small punctures; upper fovea small, slender; lower fovea broadly incomplete above (Fig. 34). Front femora 2.1 x as long as wide; middle tibiae spinose; claws dentate, the tooth fairly long and sloping outward somewhat.

Description of male type.—Length 5.0 mm; LFW 2.8 mm. Head and thorax black, with moderately intense dark blue-green reflections; propodeum black; abdomen shining black except apical two segments suffused with brown; palpi and mandibles straw-colored, the mandibular teeth rufous; antennae light castaneous, all except the apical segment somewhat infuscated above, scape especially so; tegulae testaceous; legs bright rufo-castaneous except all coxae blackish; wings subhyaline, veins and stigma brown. Mandibles with the usual five teeth; clypeus obtusely subangulate, with a low median ridge. WH 1.18 x LH; WF .70 x WH, 1.43 x HE; front angle of ocellar triangle slightly less than a right angle, OOL 1.10 x WOT. Vertex broadly rounded off a short distance above the eye tops. Front strongly shining, weakly alutaceous, punctures small but sharply defined, on lower part separated by 2-3 x their own diameters, on upper part by 4-6 x their own diameters. First four antennal segments in a ratio of about 20:10:6:11, segment three .6 as long as wide, segment four about as long as thick, segment eleven 2.5 x as long as thick; flagellar pubescence pale and erect, longest setulae of segment eleven about half as long as width of segment (Fig. 73).

Thoracic dorsum shining, weakly alutaceous, the punctures weak; pronotal disc slightly longer than mesoscutum; notauli very wide behind, much narrowed anteriorly, reaching anterior margin of scutum as thin lines; scutellar groove wider medially than in the female, widened and deflected backward at each end. Propodeal disc 1.35 x as wide as long, with five discal carinae, only the median one intercepting the transverse carina; lateral and sublateral carinae strong, disc also with a round-topped ridge between the sublaterals and the lateral discals and mostly covered with transverse striae; declivity transversely

ridged below; side-pieces with strong longitudinal ridges, more especially below. Mesopleurum shining, weakly alutaceous; upper fovea open behind, as in the preceding species; lower fovea broadly open above. Claws trifold (Fig. 65).

Other specimens examined.—HONDURAS: 1 ♀, "Banana debris, 3-25-40, lot no. 40-6469" (presumably intercepted at quarantine) [USNM]. COSTA RICA: 1 ♂, Turrialba, 17 June 1949 (K. W. Cooper) [USNM]. PANAMA: 2 ♂♂, Pacora, Canal Zone, same data as plesiallotype except 13 May 1953 and July 1953 [USNM].

Variation.—The Honduras female is strikingly like the female from Panama; WF is $1.13 \times$ HE; OOL is $1.53 \times$ WOT; the upper mesopleural fovea is even more elongate. The males are all slightly larger than the type (LFW 3.2-3.3 mm); the Pacora specimens have paler antennae, only very slightly infuscated above, and these specimens also have the hind femora infuscated. In the males, WH varies from 1.13 to $1.18 \times$ WH, WF from 1.33 to $1.38 \times$ HE, OOL from 1.13 to $1.22 \times$ WOT. In the Pacora males the antennae are more elongate than in the Turrialba and Teapa males, segment four being distinctly longer than wide, segment eleven more than $3 \times$ as long as wide.

37. RHABDEPYRIS (CILOREPYRIS) BLANTONI new species

Holotype.—♂, PANAMA: Pacora, Canal Zone, 13 May 1953 (F. S. Blanton) [USNM, No. 67,541].

Description of male type.—Length 5.5 mm; LFW 3.8 mm. Head and thorax black, shining, with moderately strong bluish green reflections; propodeum black, with faint dark blue reflections in certain lights; abdomen shining black, the apical .4 bright ferruginous; palpi and mandibles testaceous, the latter dark at tips; antennae bright rufo-testaceous except the scape strongly infuscated; tegulae testaceous; coxae black, femora medium brown, legs otherwise testaceous; wings lightly tinged with brownish, veins and stigma brown. Mandibles with the usual five teeth; elypeus short, obtusely angulate. WH $1.09 \times$ LH; WF $.62 \times$ WH, $1.10 \times$ HE; ocelli in about a right triangle, OOL $1.1 \times$ WOT. Front shining, weakly alutaceous except not at all so on the vertex, with sharply defined punctures which are separated by only $1-2 \times$ their own diameters. First four antennal segments in a ratio of about 28:7:4:11, segment three unusually short, only about .3 as long as wide, segment four

very slightly longer than wide, segment eleven about 1.5 x as long as wide. (Fig. 23.)

Thoracic dorsum polished, non-alutaceous, wholly covered with small punctures; notauli moderately wide behind, tapering and diverging anteriorly; scutellum with a pair of large, strongly oblique pits which are connected by a slender groove. Propodeal disc 1.4 x as wide as long, with five carinae; lateral and sublateral carinae running closely parallel, the latter paralleled by a broad, longitudinal groove; space between this groove and the lateral discal carinae shining and with only some very weak surface sculpturing; declivity with transverse ridges below; side-pieces with moderately coarse longitudinal striae. Mesopleurum polished, punctate; upper fovea elongate, open behind; lower fovea large, its upper margin obsolete (Fig. 40). Front femora 2.3 x as long as wide; middle tibiae weakly spinose; claws trifid, the middle ray truncate (Fig. 64).

Paratypes.—PANAMA: 5 ♂♂, same data as type [USNM, MCZ].

Variation.—Little variation is evident in this series. There is some slight variation in the hue of the metallic colors of the head and thorax and in the degree of infuscation of the femora; in some specimens the bluish reflections of the propodeum are barely evident. In the paratypes, LFW varies from 3.1 to 3.5, WH from 1.06 to 1.09 x LH, WF from 1.1 to 1.2 x HE, OOL from 1.0 to 1.1 x WOT.

Remarks.—It is possible that these specimens represent the male sex of *metallicus* Kieffer or *tricolor* n.sp., but there are enough doubts in my mind to justify recognizing them as a distinct species for the present. The very short third antennal segment is unique in this subgenus.

38. RHABDEPYRIS (CHLOREPYRIS) VIRIDISSIMUS (Kieffer) new combination

Epyris viridis Kieffer, 1911, Ann. Soc. Sci. Bruxelles, 35: 223-225 [Type: ♀, MEXICO: Teapa, Tabasco, March (H. H. Smith) (BMNH)]. Preoccupied by Cameron, 1888.

Epyris viridissimus Kieffer, 1911, *ibid.*, p. 225 [Type: ♂, MEXICO: Teapa, Tabasco, March (H. H. Smith) (BMNH)].

Chlorepyris semiviridis Kieffer, 1913, Boll. Lab. Zool. Portici, 7: 108 (new name for *viridis* Kieffer, not Cameron). —Kieffer, 1914, Das Tierreich, 41: 414. New synonymy.

Chlorepyris viridissimus Kieffer, 1914, *ibid.*, p. 415.

Description of female type of semiviridis Kieffer.—Length 7.8 mm; LFW 4.4 mm. Head and thorax brilliant green; propodeum black; basal 3.5 segments of abdomen shining black, remainder of abdomen bright rufo-castaneous; palpi light brown; mandibles ferruginous; antennae bright rufo-castaneous, slightly paler apically than basally; tegulae with greenish reflections; legs bright rufo-castaneous except all coxae suffused with black; fore wing lightly tinged with yellowish, basal third and apical .4 lightly infuscated, leaving a subhyaline area below the stigma. Mandibles with five apical teeth and a strong subapical tooth on the lower margin (Fig. 53). Clypeus short, obtusely angulate, its median ridge slightly concave in profile. WH 1.2 x LH; WF .61 x WH, 1.10 x HE; ocelli in a small triangle, front angle less than a right angle, OOL 1.4 x WOT. Front polished, obscurely alutaceous, punctures strongly defined, separated by 2-4 x their own diameters. First four antennal segments in a ratio of about 22:6:5:7, segment three about .7 x as long as wide, segments four and eleven each about as long as wide.

Thoracic dorsum shining, obscurely alutaceous, and with well spaced strong punctures like the front; notauli moderately wide behind, tapering and diverging anteriorly; scutellar groove relatively narrow, deflected backward and slightly widened at each end. Propodeal disc 1.4 x as wide as long, the five discal carinae all reaching the transverse carina; lateral and posterior carinae margined within by broad, subfoveolate grooves; surface transversely ribbed between discal carinae, elsewhere with weak sculpturing. Mesopleurum polished, weakly alutaceous, with small, well-spaced punctures; upper fovea about 3 x as long as high; lower fovea large, broadly open above. Front femora 2.2 x as long as wide; middle tibiae strongly spinose; claws trifid (Fig. 66).

Description of male type.—Length 6 mm; LFW 3.6 mm. Head and thorax brilliant green; propodeum black; basal 4.5 segments of abdomen shining black, remainder bright rufo-castaneous; palpi straw-colored; mandibles rufo-testaceous, the teeth darker; clypeus brownish; antennae with the scape fuscous, the flagellum pale rufo-castaneous except basal few segments weakly infuscated on upper side; tegulae brown, with blue-green reflections; legs bright rufo-castaneous except all coxae blackish; wings very lightly infuscated, more especially so around radial vein of fore wing. Mandibles 5-toothed; clypeus very short, obtusely angulate. WH 1.20 x LH; WF .61 x WH,

1.13 x HE; front angle of ocellar triangle very slightly less than a right angle, OOL 1.05 x WOT. Front shining, obscurely alutaceous, the punctures strong, somewhat more closely spaced than in the female, separated by 1-3 x their own diameters. First four antennal segments in a ratio of about 28:6:8:13, segment three about .7 as long as thick, segment four about as long as thick, segment eleven about twice as long as thick.

Thoracic dorsum weakly alutaceous, wholly covered with rather large punctures; notauli wide behind, separated by about their own widths, diverging and attenuate anteriorly; scutellar groove narrow, connecting two large, oblique pits. Propodeal disc 1.4 x as wide as long, with five discal carinae; lateral and sublateral carinae closely parallel, the latter paralleled by a shallow groove along its mesal margin; postero-lateral foveae very strong; sidepieces with 8-10 coarse, irregular ridges. Mesopleurum alutaceous, with shallow punctures; upper fovea elongate, open behind (Fig. 41); lower fovea not well defined above. Front femora 2.4 x as long as wide; claws trifold (Fig. 67).

Other specimens examined. — MEXICO: 1 ♀, Mazatlan, Sinaloa, 20 July 1959 (H. E. Evans) [MCZ]; 1 ♀, Cordoba, Veracruz, 20 January 1908 (F. Knab) [USNM]; 3 ♂♂, Teapa, Tabasco (same data as type) [BMNH]. GUATEMALA: 1 ♀, "Guatemalan forest," 3 March 1909 (F. Knab) [USNM].

Variation. — The females vary considerably in size (LFW 4.0-5.3 mm) but differ in color only in having the green coloration somewhat blue-green in the Cordoba specimen. This same specimen also has the punctures of the head and thorax somewhat weaker and more widely spaced, also the scutellar groove very narrow indeed, connecting two large, oblique pits, more as in the male. Since the other two females show some variation in the scutellar groove, I doubt if the Cordoba specimen is more than an extreme variant in this regard. The Mazatlan specimen is the largest, being fully 9 mm long, and has the thoracic dorsum and pleura much more evidently alutaceous than do the other females. In the females, WH varies from 1.3 to 1.20 x LH, WF from 1.10 to 1.25 x HE, OOL from 1.4 to 1.6 x WOT.

The three topotypic males resemble the type closely, but some are more blue-green than green, and the head tends to be slightly less broad in some (WH 1.15-1.20 x LH; WF 1.10-1.20 x HE).

39. RHABDEPYRIS (CHLOREPYRIS) FULGENS (Brues) new combination

Epyris fulgens Brues, 1907, Bull. Wis. Nat. Hist. Soc., 5: 99-100 [Type: ♀, TEXAS: Brownsville, 4 August (C. Schaeffer) (USNM, No. 42,702)].

Chlorepbris fulgens Kieffer, 1914, Das Tierreich, 41: 414. —Muesebeck and Walkley, 1951, U.S. Dept. Agr. Monogr. 2, p. 730.

Description of female type. — Length 7.0 mm; LFW 4.0 mm. Head and thoracic dorsum green, with bluish green reflections in certain lights; mesopleurum aeneous, grading into bluish below; propodeum violaceous; basal three abdominal segments and basal part of fourth tergite black, remainder of abdomen rufo-testaceous; palpi testaceous; mandibles testaceous, the teeth rufous; antennae pale ferruginous except somewhat dusky on outer surface, segments two and three wholly dusky; tegulae with greenish reflections; legs bright rufo-testaceous except front coxae black, hind coxae weakly infuscated basally; wings subhyaline, veins and stigma light brown. Mandibles as in the preceding species and as shown in Figure 54; clypeus broadly angulate, the median ridge concave in profile. WH 1.16 x LH; WF .63 x WH, 1.23 x HE; front angle of ocellar triangle slightly less than a right angle, OOL 1.5 x WOT. Front strongly polished, obscurely alutaceous below, with a linear median impression opposite the lower third of the eyes; punctures of front strong, separated by 2-4 x their own diameters. First four antennal segments in a ratio of about 18:5:4:6, segment three considerably wider than long, segment four slightly longer than wide (Fig. 74).

Thoracic dorsum shining, obscurely alutaceous; punctures of pronotum strong, separated by 2-4 x their own diameters, those on the mesoscutum occurring mostly along the notauli; notauli linear, only slightly widened behind, complete; scutellar groove narrow, much widened on each side. Propodeal disc 1.4 x as wide as long, with five discal carinae between which it is transversely ribbed, the space between the lateral discals and the laterals smooth and merely very finely striolate; side-pieces finely striolate. Mesopleurum weakly alutaceous, with small punctures; upper fovea about twice as long as high; lower fovea broadly incomplete above. Front femora twice as long as wide; middle tibiae strongly spinose, hind tibia more weakly so; claws trifid (Fig. 68).

Plesiallotype. — ♂, HONDURAS: Tegucigalpa (F. J. Dyer) [USNM].

Description of male plesiallotype. — Length 5.5 mm; LFW 3.9 mm. Head and thorax brilliant green, with the thorax with some bluish tints; propodeum bluish green, somewhat less brilliant than the head and thorax, especially on the side-pieces; abdomen black, apical .4 rufo-testaceous; palpi and mandibles testaceous, the latter with rufous tips; scape fuscous, flagellum rufo-testaceous except basal segments moderately infuscated on upper surface; tegulae brown, with green reflections; legs bright rufo-testaceous except all coxae infuscated; wings tinged with brownish, veins and stigma brown. Clypeus obtusely angulate, its median carina concave in profile. WH 1.20 x LH; WF .63 x WH, 1.24 x HE; front angle of ocellar triangle very slightly exceeding a right angle, OOL and WOT subequal. Vertex straight across in center, broadly rounded on the sides. Front polished, obscurely alutaceous below but non-alutaceous above, punctures strong, separated by 1-3 x their own diameters. First four antennal segments in a ratio of about 25:7:8:13, segment three .7 as long as wide, segment four very slightly longer than wide, segment eleven 1.8 x as long as wide. (Fig. 24.)

Thoracic dorsum shining, wholly covered with fairly strong punctures; notauli wide behind, separated by slightly less than their own widths, strongly diverging and attenuate anteriorly; scutellar groove strong, much widened at each end. Propodeal disc 1.4 x as wide as long, with five carinae between which it is strongly transversely ridged; lateral and sublateral carinae closely parallel, the sublaterals subtending a broad groove which occupies nearly half the space between these carinae and the lateral discals; postero-lateral foveae very large; side-pieces with only about six large, longitudinal ridges. Mesopleurum with the upper fovea large, open behind; lower fovea large, well defined, its upper margin partially incomplete (Fig. 42). Front femora 2.4 x as long as wide; claws trifold, about as in *viridissimus* (Fig. 67).

Remarks. — This species is known to me only from the two specimens described above.

40. RHABDEPYRIS (CHLOREPYRIS) TRICOLOR new species

Holotype. — ♀, ECUADOR (label reads: on roses *ex* Ecuador, VII-29-1962; F. J. Formichella, lot 62-26784) (presumably intercepted at quarantine) [USNM, No. 67,542].

Description of female type.—Length 6.0 mm; LFW 3.5 mm. Head, thorax, and propodeum brilliant dark blue-green, outer side of front femora also of this color; abdomen black except apical .4 bright ferruginous; palpi and mandibles testaceous except the latter darker at extreme base and apex; antennae fuscous except segments 4-12 testaceous beneath, the apical segment wholly testaceous; coxae black, legs otherwise bright ferruginous except outer side of front femora dark like the body; wings tinged with brown, the base of the fore wing, including the veins, somewhat yellowish. Mandibles essentially as figured for the preceding species (Fig. 54). Clypeus obtusely angulate, barely protruding beyond the strong antennal lobes. WH 1.12 x LH; WF .64 x WH, 1.18 x HE; front angle of ocellar triangle less than a right angle, OOL 1.7 x WOT. Vertex straight, distance from eye tops to vertex crest equal to about one-third x HE. Front polished, very obscurely alutaceous, with strong punctures which are separated, in the center of the front, by 2-4 x their own diameters (more crowded below, less so above). Antennae arising only slightly below bottoms of eyes, first four segments in a ratio of about 30:7:6:9, segment three considerably wider than long, segment four about as long as wide, segments 5-12 very slightly wider than long. (Fig. 16.)

Thoracic dorsum shining but slightly more evidently alutaceous than the front; pronotum with numerous fairly strong punctures, slightly longer than mesoscutum. Mesoscutum with a few punctures along the parapsidal furrows and notauli, the latter complete but reduced to thin lines on the anterior half; scutellar groove a mere line connecting two oblique, elliptical pits. Propodeal disc 1.35 x as wide as long, with five discal carinae between which it is transversely striate and laterad of which there is weak surface sculpturing; sublateral carinae not distinct, but lateral carinae paralleled by a broad, transversely striate groove; declivity with transverse ridges below; side-pieces shining, with weak longitudinal aciculations. Mesopleurum weakly alutaceous, weakly punctate; upper fovea extending most of the length of the mesopleurum, nearly 5 x as long as wide; lower fovea large, its upper margin mostly indistinct (Fig. 35). Front femora moderately incrassate, measuring 2.0 x as long as wide; middle and hind tibiae strongly spinose; claws trifold (as figured for *fulgens*, Fig. 68).

Remarks.—This species is known only from the type. It

seems definitely to belong to this complex of *Rhabdepyris*, although the scutellar pits differ hardly at all from those of some species of *Epyris*.

41. RHABDEPYRIS (CHLOREPYRIS) VIOLACEUS new species

Holotype. — ♀, BRAZIL: Nova Teutonia, Santa Catarina, 30 August 1938 (F. Plaumann) [BMNH].

Description of female type. — Length 7.5 mm; LFW 4.5 mm. Head and thorax, including scape, tegulae, and outer sides of femora, brilliant blue-violet, with greenish tints in certain lights; propodeum dark blue, contrasting slightly to head and thorax; abdomen black except apical tergite brownish; mandibles black except apical fourth rufo-testaceous; antennae fuscous except front tibiae and all the tarsi light brown; wings lightly tinged with brown, veins and stigma brown. Mandibles with five apical teeth and a large subapical tooth on the lower margin. Clypeus obtusely subangulate, barely produced beyond antennal insertions. WH 1.17 x LH; WF .65 x WH, 1.20 x HE; front angle of ocellar triangle much less than a right angle, OOL 1.60 x WOT. Vertex broad, straight; distance from eye tops to vertex crest equal to about .3 x HE. Front shining, weakly alutaceous, with large punctures which are separated by only 1-2 x their own diameters (more widely spaced at level of ocelli). First four antennal segments in a ratio of about 40:9:8:12, segment three very slightly wider than long, segments four and eleven both approximately as wide as long.

Thoracic dorsum weakly alutaceous and punctate like the front; notauli complete, rather slender and only slightly attenuate anteriorly; scutellar grooves very thin, connecting a pair of small lateral pits. Propodeal disc 1.35 x as wide as long, the five discal carinae parallel and complete, the surface weakly transversely ridged between the carinae, elsewhere with only very weak surface sculpturing; side-pieces shining, with extremely fine longitudinal striations. Upper mesopleural fovea about 3 x as long as high, lower fovea broadly incomplete above (Fig. 36). Front femora only slightly incrassate, measuring 2.4 x as long as wide; claws trifold, middle ray truncate (Fig. 69).

Allotype. — ♂, BRAZIL: Rio Caraguata, Matto Grosso, May 1953 (F. Plaumann) [MCZ].

Description of male allotype. — Length 6.0 mm; LFW 3.5 mm. Coloration as described for female, except with slightly stronger

greenish reflections, even on the propodeum, which contrasts very little with the thorax; abdomen entirely black; mandibles brownish, paler apically; antennae fuscous except flagellar segments testaceous beneath; legs and wings colored as in female. Clypeus broadly subangulate. WH 1.18 x LH; WF .64 x WH, 1.28 x HE; ocellar triangle rather broad, WOT exceeding OOL slightly. Front polished, non-alutaceous, punctures strong, separated by 1.5-3 x their own diameters. First four antennal segments in a ratio of about 20:6:8:11, segment three considerably wider than long, segment four slightly longer than wide, segment eleven about twice as long as wide.

Thoracic dorsum slightly alutaceous, with strong punctures like the front; notauli very wide behind, separated by only a thin carina, diverging and attenuate anteriorly; parapsidal furrows strong and complete, somewhat sinuate; scutellar disc rather flat, the basal groove rather short, expanded on each side to form oblique pits. Propodeal disc 1.3 x as wide as long, somewhat narrowed behind; disc with only three carinae, between which it is transversely ridged, sublateral carinae strong, subtending a broad groove which occupies about half the space between the sublaterals and the lateral discals; this groove, like that between the sublateral and lateral carinae, is polished and without sculpturing; side-pieces with only six strong, longitudinal ridges. Mesopleurum with the upper fovea very large, open behind. Claws trifid (Fig. 70).

Paratypes.—2 ♀♀, BRAZIL: same data as type except dated 10 September 1938 and 21 December 1937 [BMNH, MCZ].

Variation.—In both paratypes the propodeum has some greenish reflections and therefore does not contrast with the head and thorax as much as in the type. Otherwise these females are very similar to the type in color, size, and standard measurements. In both specimens the ocelli are slightly less far removed from the eye margins, OOL being 1.43 and 1.50 x WOT.

Remarks.—This is one of the most brilliantly colored of all bethylid wasps and doubtless the most highly evolved member of this subgenus.

ALPHABETICAL LIST OF ABBREVIATIONS USED IN TEXT

Structures

HE: height of eye (maximum, lateral view)

LFW: length of fore wing

- LH: length of head (apical margin of clypeus to median vertex crest)
 OOL: ocello-ocular line (minimum distance from eye to lateral ocellus)
 WF: width of front (measured at its minimum point)
 WH: width of head (maximum, including eyes)
 WOT: width of ocellar triangle (including lateral ocelli)

Institutions

- AMNH: American Museum of Natural History, New York
 ANSP: Academy of Natural Sciences of Philadelphia
 BMNH: British Museum (Natural History), London
 BSA: Brasil: Secretaria da Agricultura, São Paulo
 CAS: California Academy of Sciences, San Francisco
 CIS: California Insect Survey, Berkeley
 CM: Carnegie Museum, Pittsburgh, Pa.
 CU: Cornell University, Ithaca, N.Y.
 ENAC: Escuela Nacional de Agricultura, Chapingo, Mexico
 HCOU: Hope Collections, Oxford University, England
 INHS: Illinois Natural History Survey, Urbana
 KU: Kansas University, Lawrence
 KSU: Kansas State University, Manhattan
 MCZ: Museum of Comparative Zoology, Cambridge, Mass.
 UA: University of Arizona, Tucson
 UCD: University of California, Davis
 USNM: United States National Museum, Washington

LIST OF SPECIES OF *RHABDEPYRIS*
 OCCURRING IN THE AMERICAS

Subgenus *Rhabdepyris* Kieffer, 1904

1. *mellipes* Evans, n. sp. (♀, Florida)
2. *huachucac* Evans, n. sp. (♀, Arizona)
3. *muesbecki* Evans, n. sp. (♀, ♂, Mexico to Bolivia)
4. *gracilis* Evans, n. sp. (♀, ♂, California; Durango, Mexico)
5. *minutulus* Evans, n. sp. (♀, Peru)
6. *nigriscapus* Evans, n. sp. (♀, Argentina)

Subgenus *Trichotepyrus* Kieffer, 1906

Nigropilosus species-group

7. *nigropilosus* Evans, n. sp. (♀, Panama, Brazil)

Megacephalus species-group

8. *megacephalus* (Ashmead), 1893 (♀, ♂, California to Texas)
9. *weneri* Evans, n. sp. (♀, ♂, Arizona)
10. *apache* Evans, n. sp. (♀, ♂, Arizona; Sonora, Mexico)
11. *texanus* Evans, n. sp. (♀, ♂, Texas and Arizona to Morelos, Mexico)
12. *mexicanus* Evans, n. sp. (♀, ♂, Morelos and Chiapas, Mexico)
13. *fortunatus* Evans, n. sp. (♀, Costa Rica)

14. *lupus* Evans, n. sp. (♀, Morelos, Mexico)
15. *carolinianus* Evans, n. sp. (♀, South Carolina, Florida)
16. *subaeneus* Kieffer, 1906 (♀, Nicaragua)
17. *angusticeps* Evans, n. sp. (♀, Arizona)
18. *olivaceus* Evans, n. sp. (♂, Panama, Colombia)
19. *plaumanni* Evans, n. sp. (♀, ♂, Brazil)

Pulchripennis species-group

20. *pulchripennis* Evans, n. sp. (♀, Costa Rica)
21. *iridescens* Evans, n. sp. (♀, Morelos, Mexico)
22. *cupreolus* Evans, n. sp. (♀, Brazil)
23. *amabilis* Fouts, 1927 (♀, ♂, Massachusetts to Florida)

Subgenus *Chlorepyris* Kieffer, 1913

Lobatifrons species-group

24. *luteipennis* Evans, n. sp. (♀, ♂, Brazil to Nicaragua)
25. *lobatifrons* Kieffer, 1910 (♂, Brazil)
Synonym: *obscuripennis* Kieffer, 1910
26. *septemlineatus* Kieffer, 1906 (♂, Nicaragua, Panama)
27. *quinquelincatus* Kieffer, 1906 (♀, ♂, Mexico to Nicaragua)
28. *nigerrimus* Evans, n. sp. (♀, Bolivia)

Muscarius species-group

29. *muscarius* (Westwood), 1874 (♀, ♂, Mexico to Peru and Brazil)
Synonym: *microstoma* Kieffer, 1910
30. *puncticeps* Evans, n. sp. (♂, Brazil)
31. *origenus* Kieffer, 1911 (♀, Mexico)
32. *vesculus* Evans, n. sp. (♂, Brazil)
33. *virescens* Evans, n. sp. (♀, ♂, Panama to Peru and Brazil)
34. *viridis* (Cameron), 1888 (♀, Guatemala)
35. *metallicus* Kieffer, 1908 (♀, Nicaragua)

Viridissimus species-group

36. *subviridis* (Kieffer), 1911 (♀, ♂, Mexico to Panama)
37. *blantoni* Evans, n. sp. (♂, Panama)
38. *viridissimus* (Kieffer), 1911 (♀, ♂, Mexico, Guatemala)
Synonym: *semiviridis* Kieffer, 1913
39. *fulgens* (Brues), 1907 (♀, ♂, Texas to Honduras)
40. *tricolor* Evans, n. sp. (♀, Ecuador)
41. *violaceus* Evans, n. sp. (♀, ♂, Brazil)

(Received May 28, 1964.)